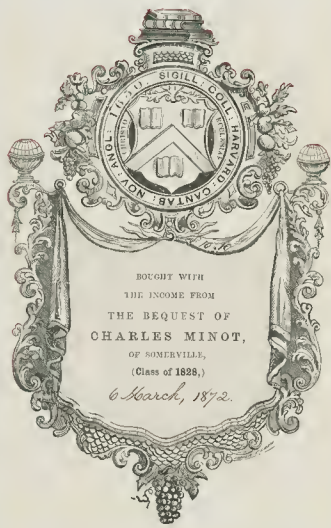


ZOOLOGICAL SKETCHES

BY

JOSEPH WOLF.

V O L . 2 .



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ZOOLOGICAL SOCIETY OF LONDON

ZOOLOGICAL SKETCHES

BY JOSEPH WOLF.

MADE FOR THE

ZOOLOGICAL SOCIETY OF LONDON,

FROM ANIMALS IN THEIR VIVARIUM,

IN THE REGENT'S PARK.

SECOND SERIES.

Edited, with Notes,

BY

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P R E F A C E.

THE origin and object of the present work, and the mode of its execution have been fully explained in the preface to the First Series. The present volume, containing fifty plates as the former, has been prepared under the same circumstances. It contains figures of many of the most interesting novelties recently added to the Zoological Society's living collection, amongst which special attention may be called to the series of Pheasants, of which figures are given in Plates xxxii. to xxxix.

The whole of the original drawings, from which the plates of the present work have been prepared have been recently framed and mounted, and are now exhibited in the Picture Gallery in the Society's Gardens in the Regent's Park.

PHILIP LUTLEY SCLATER.

11, HANOVER SQUARE.

March 11th, 1837.

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THE ASHY-BLACK MACAQUE.

Macacus ocreatus.

PLATE I.

THE group of Monkeys to which the name Macaque is applied contains some of the best known and commonest species usually met with in captivity, such as the Bonnet-Monkey, the Toque, and the Rhesus. They are found in a state of nature mostly in Southern Asia and its neighbouring islands.

In the summer of 1858, the Zoological Society obtained a specimen of the rare Macaque here represented, out of a travelling menagerie. It was somewhat paralysed in its hind quarters when received, and did not promise to be very long lived. The species is certainly the same as that described by Mr. Ogilby in 1840,* from a specimen observed living in a menagerie at that time, and is probably identical with *Macacus fusco-ater* of Schinz, in which case however Mr. Ogilby's name has precedence. It belongs strictly to the division of Macaques in which the tail is very short, sometimes reduced almost to a tubercle, as in *M. arctoides* and *M. maurus*. There is no example of this species in the British or French national collections; but the Leyden Museum contains two specimens, which I believe to belong to it. The example in the Frankfort collection is said to have been brought from Celebes, but I doubt whether that island is its real home.

**Papio ocreatus*, Ogilby, Proc. Zool. Soc. 1840, p. 56.



THE ASHY-BLACK APE.

MACACUS OCREATUS.

THE BLACK-FRONTED LEMUR.

Lemur nigrifrons.

PLATE II.

SINCE the occurrence of recent events has re-opened Madagascar to Europeans, the various species of Lemurs, which are so numerous in the forests of that island, have been brought more frequently to this country, and a tolerably full series of these attractive animals may now generally be found in the Society's Monkey-house. Some of them occasionally breed in captivity, and the present illustration has been prepared with the object of showing the singular position in which, on such occasions, the young animal is carried by its mother.

The Lemur commonly called the Black-fronted Lemur, was first distinguished as a separate species by M. Geoffroy St. Hilaire in his "Tableau des Quadrumanes," published in the 19th volume of the "Annales du Muséum d'Histoire Naturelle." It is, however, rather doubtful whether this animal is really specifically distinct from the *Lemur mongoz* of Linnæus.

Professor Schlegel has lately shown that a series of skins of the same species of Lemur from the same locality present considerable variations in coloring,* and there can be little doubt that the number of species of this group has been unduly augmented by authors who have based their distinctive characters solely on slight variations of color.

The young Lemur represented in the accompanying plate, was born in the summer of 1865, and in October 1866 had attained its full size. It was the produce of two different species, the male having belonged to the species lately determined by Dr. Gray as *Lemur xanthomystax*. The hybrid offspring has, in this instance, taken after the father's coloration, which is conspicuously distinct from that of the mother.

*Nederlandsch Tijdschrift v. d. Dierkunde, Deel iii., p. 74 et seq.



THE BLACK-FRONTED LEMUR.

LEMUR NIGRIFRONS.

THE AYE-AYE.

Chiromys madagascariensis.

PLATE III.

THE Aye-aye of Madagascar is one of the rarest and most remarkable animals that have ever been exhibited in the Society's Gardens. Although discovered by the French traveller Sonnerat as long ago as in 1780, it was until very lately represented in European collections of Natural History only by the original stuffed specimen presented by its discoverer to the illustrious Buffon, who deposited it in the French National Zoological Museum. It was not until 1844 that a second example of this animal was received in Europe, and this also passed into the collection of the Jardin des Plantes at Paris. A few years after this the first specimen of the Aye-aye reached this country. Dr. H. Sandwith, C.B., when Colonial Secretary in Mauritius, having had his attention called to the subject by Professor Owen, obtained, after much difficulty, a living example of the Aye-aye, from the forests of its native island. This animal was eventually forwarded to the British Museum in spirits, and became the subject of an elaborate memoir on its osteology and anatomy, read by Professor Owen before the Zoological Society, and printed in the fifth volume of the Society's "Transactions."

The Zoological Society's Aye-aye, which was the first, and remains up to the present time the only example of this animal brought alive to Europe, was received in August, 1862, from Mr. Edward Mellish, of Mauritius. Mr. Mellish had formed one of the mission sent out from Mauritius to Madagascar in 1861, to congratulate King Radama II. on his accession to the throne of the Hovas, and knowing the interest that attached itself to the Aye-aye, had made great efforts to procure a living specimen. At the time of his visit to Madagascar Mr. Mellish did not succeed in his object, but having been subsequently more successful through the assistance of some correspondents in the island, most liberally presented the fine adult living female of the Aye-aye, thus obtained, to the Society.

The interest of the Aye-aye centres in the anomalous structure of its incisor teeth, which induced Cuvier to class it among the Rodents. It is, however, now universally agreed among naturalists that the Aye-aye is an abnormal development of the Lemurs, and must be located at the foot of the Quadrumana—the highest group of Mammals.

The Aye-aye is purely nocturnal in its habits. In captivity it never leaves the darkened box provided for it inside its cage during the day-time, but sleeps within, with the body curled round and covered up by the long and bushy tail. At night it comes forth and crawls about, gnawing and destroying all the woodwork left exposed within its cage, and feeding on fruit and a mixture of milk, honey, and eggs, which is provided for it.

In a letter to Professor Owen, which has been published in the Zoological Society's "Proceedings," Dr. Sandwith gives the following account of some peculiar habits of the Aye-aye:—

"It so happened that some thick sticks put into his cage were bored in all directions by a large and destructive grub, called here the *Moulouk*. Just at sunset the Aye-aye crept from under his blanket, yawned, stretched, and betook himself to his tree, where his movements are lively and graceful, though by no means so quick as those of a squirrel. Presently he came to one of the worm-eaten branches, which he began to examine most attentively; and bending forward his ears, and applying his nose close to the bark, he rapidly tapped the surface with his curious second digit, as a woodpecker taps a tree, though with much less noise, from time to time inserting the end of his slender finger into the worm-holes, as a surgeon would a probe. At length he came to a part of the branch which evidently gave out an interesting sound, for he began to tear it with his strong teeth. He rapidly stripped off the bark, cut into the wood, and exposed the nest of a grub, which he daintily picked out of its bed with the slender tapping fingers, and conveyed the luscious morsel to his mouth."

These observations have led to the conclusion that the abnormal incisor teeth of the Aye-aye have been "specially modified" to enable the animal to reach these wood-boring larvæ in their holes, and that the extraordinary slender third finger was likewise "pre-ordained" to "feel, seize, and draw out" the grub. But, strangely enough, the Aye-aye in the Zoological Society's Gardens refuses to touch insects and grubs of any sort, and lives solely on thick, sweet, glutinous fluids and fruit. Nor has it been noticed to use its long slender third finger, except for the purpose of cleaning its fur, and in feeding it doubles this digit "upwards and backwards," away from the rest. The conclusion, therefore, to be drawn from the habits of the Aye-aye in captivity would be, that its natural food is the juices of trees, obtained by tearing away the bark with its teeth, and this view would likewise account for its excessive gnawing propensities.



THE AYE-AYE.

CHIROMYS MADAGASCARIENSIS.

THE FENNEC FOX.

Canis cerdo.

PLATE IV.

THE Fennec Fox is certainly one of the most interesting and elegant animals of the great carnivorous group to which it belongs. It is remarkable at once for its small general size, and for its enormously developed ears, which render it easily distinguishable from every other member of the genus *Canis*.

The first writer who has spoken of the Fennec from his own examination seems to be the Swedish Naturalist, Skiöldebrand, who met with a specimen of this Fox in captivity in Algiers, and described it in 1777, in the Proceedings of the Royal Academy of Sciences of Stockholm, under the name *Vulpes minutus saarensis*. Our countryman Bruce who was in Algiers at the same time as Skiöldebrand, likewise speaks of this animal in his "Travels in Nubia and Abyssinia," and contradicts many of the latter's statements respecting it. Bruce calls it the "Fennec," and states that such is its universal appellation throughout Africa, the derivation of the name being the *Phoenix* or Palm tree found in the deserts to which it resorts. The celebrated Abyssinian traveller and Naturalist, Dr. E. Rüppell, of Frankfort-on-the-Maine, sent several specimens of this Fox to the Senckenbergian Museum of that city, in 1824 and 1828, and a good figure and good description of it were first given by Dr. Cretzschmar, in the Zoological Atlas of Rüppell's Travels. Dr. Rüppell found it in the neighbourhood of Ambukol, and in the sand-desert of Corte, extending up to the boundaries of Egypt. From the researches of the late Captain Loche, we are aware that it is likewise found in the Mزاب and Souf countries to the south of Algeria.

The Fennec is a rare animal in captivity. The specimens from which Mr. Wolf's figures are taken, were received from Egypt in 1858, and lived in good health in the Society's Gardens until destroyed by an unlucky accident. They have since been replaced by another pair.



THE FENNEC FOX.

CANIS CERDO.

THE YAGUARUNDI CAT.

Felis yaguarundi.

PLATE V.

THE Yaguarundi is one of the small group of American Cats distinguished by their uniform coloration and the round pupil of the eye. The well-known Puma commonly called the "American Lion" (*Felis concolor*), and the Eyra (*Felis eyra*), of which a figure has been already given in this work,* are other members of the same division of this extensive genus.

The Yaguarundi was first discovered by the Spanish Naturalist Don Felix d'Azara, who gave it the barbarous name it is usually known by, being the appellation bestowed upon it by the Guaranese Indians. In Paraguay, Azara tells us, this species of Cat inhabits the borders of woods and thickets, not venturing into open places, and climbing trees with facility. Mr. Darwin, during his celebrated voyage round the world, obtained an example of the Yaguarundi in the vicinity of Rio de Janeiro, and gives an excellent figure of it in the volume devoted to the Mammals of his journey. Both Prince Max. of Neuwied and Professor Burmeister also include notices of it in their zoological works on Brazil. Schomburgk records its occurrence in British Guiana, and Professor Baird states that it is found as far north as Texas, so that, like the Puma and the Eyra, it appears to have a very extensive range in the New World.

The Yaguarundi is very rarely brought alive to Europe. The example from which Mr. Wolf's sketch was taken was living in the Gardens in 1852.

* Zool. Sketches, Ser. 1, pl. vi.



THE YAGUARUNDI CAT.
FELIS YAGUARUNDI

THE NORWEGIAN LYNX.

Felis lynx.

PLATE VI.

THE Lynxes form a distinct section of the genus *Felis*, characterized by their short tails and pencilled ears. They are only found in the northern parts of the Old and New Worlds. The Caracal of India and Africa, figured in the first series of these sketches, is a nearly allied form.

The Norwegian Lynx, which was well known to Pliny under its present classical name, is found throughout the wooded districts of temperate and northern Europe. As is the case with most other of the larger European carnivores, it was formerly much more plentiful than it now is, having been extirpated altogether in many localities by the advancing tide of cultivation. But in Scandinavia and in Northern Russia, it is still frequently to be met with, and in some parts of Siberia, where it is widely distributed and much sought after on account of its valuable fur, is even abundant. The Russian Naturalists Von Schrenck and Radde inform us that the natives of Amoorland esteem the flesh of this animal as a great delicacy, and that the furs which are obtained by the hunters in this part of Asia mostly pass into Chinese hands, being much treasured by the high officials of the Celestial empire.

Like the rest of the Cat-tribe, the Lynx is very active and agile in its habits, climbing trees with the utmost facility, and particularly affecting forests where the timber is large. It feeds on herbivorous Mammals and the larger birds, often killing more than it can use for immediate sustenance.

The Lynx does not thrive in captivity, and few of the specimens that have been from time to time in the Society's Collection have been long-lived.

In Spain, and other parts of Southern Europe, a second species of Lynx is said to occur—the *Felis pardina* of Temminck—which, however, is not very well known to Naturalists.



THE NORWEGIAN LYNX.

FELIS LYNX.

THE VIVERRINE CAT.

Felis viverrina.

PLATE VII.

THIS well-marked species of Indian Cat, was first described by the late Mr. Bennett in the Society's "Proceedings" for 1833, from specimens presented to the Museum by Mr. Thomas Heath, and was termed *viverrina*, from its bearing some external resemblance to certain animals of the Civet group. It is rather a scarce species in captivity, but has been exhibited in the Society's Menagerie on more than one occasion. The first specimen of the Viverrine Cat received by the Society was obtained by purchase in June, 1843, and a second, from which Mr. Wolf's accompanying sketch was taken, was presented to the Menagerie by Captain Scaulan in 1848.

The Viverrine Cat is found in Bengal and Upper India generally, extending into the Tarai at the foot of the Himalayas, but not ascending the hills. It is also stated to occur in Asám, and the Tenasserim provinces. In Lower Bengal it bears the native name of "*Match-Bagrud*" or "*Fishing-Tiger*," and is said to be particularly devoted to fish, as an article of diet.



THE WAGATI CAT.

FELIS VIVERRINA.

THE RASSE.

Vicerricula malaccensis.

PLATE VIII.

THE subject of the present representation is a diminutive of the *Vicerra* or Civet-genus, which is widely diffused over the entire Indian region with the exception of the mountainous parts, its geographical range extending even into China. It is a common animal in most parts of India, the Indo-Chinese countries eastward of the Bay of Bengal, the Malayan peninsula, Java, and the Philippine Islands, and is also, probably, an inhabitant of Sumatra. Wherever found it is subject to a certain amount of variation of coloring, as is generally the case with animals of this order having a spotted skin, the ground-hair being more or less rusty, and the body markings more or less developed, both as regards the number and the intensity of the spots; but it does not appear that these variations are more than individual.

Of this species, in common with the larger Civets, the late Dr. Cantor remarks that "they are arboreal as well as terrestrial, preying upon the smaller quadrupeds, birds, fish, crustacea, insects, and fruit. Naturally very fierce, they are scarcely reclaimable, except in youth, but with age the original disposition returns. Their voice is peculiar, hoarse, and hissing."*

Mr. Hodgson remarks of the Civets generally, as observed in Nepal, that "these animals dwell in forests or detached woods and copses, whence they wander freely into the more open country by day (occasionally at least) as well as by night; for one has been killed at noon, three miles from cover, in the midst of the fields. They are solitary and single wanderers, even the pair being seldom together, and they feed promiscuously upon small mammals, birds, eggs, snakes, frogs, insects, besides some fruits and roots. In the Terai the larger Civets (*Vicerra zibetha*) are found in uncultivated copses, and they are said further to protect themselves by burrowing; at least they are frequently taken in holes, whether made by themselves or obtained by ejection of other animals. The Mushaws, a low caste of woodmen, eat their flesh."

The Rasse, is, according to Mr. Blyth, the *Gunda gokul* of the natives of Bengal. In this country it frequents the vicinity of human habitations, and the outskirts of large cities, prowling about nocturnally, and sometimes even finding its way into dwellings and outhouses, wherever it can obtain access. It eludes observation, for the most part, by its nocturnal habits, though now and then it is entrapped in places where its presence would hardly be suspected, and its depredations have been attributed to some marauding house-cat. The late Dr. Kelaart, in his "*Prodromus Faunæ Zelyanicæ*," correctly describes our animal, and remarks that the Rasse is found in the northern provinces of Ceylon, and is also very numerous in the north-eastern district. Natives keep them in cages for the sake of the musky fluid which their anal pouches secrete. When young they are docile. In a wild state they are great destroyers of poultry, and enter poultry-yards even during the day, and carry off a goose or duck. They are, however, more shy and nocturnal in densely populated neighbourhoods.

In Java, as in Ceylon, the perfume secreted by the Rasse is held in high estimation. According to the late Dr. Horsfield, "the Rasse is not unfrequently found in Java, in forests of moderate elevation above the level of the ocean. Here it preys on small birds and animals of every description. It possesses the sanguinary appetite of animals of this family in a high degree. In confinement, it will devour a mixed diet, and is fed on eggs, fish, flesh, and rice. Salt is reported by the natives to be a poison to it. The odoriferous substance, the *dedes* of the Javanese or *jibet* of the Malays, is collected periodically. The animal is placed in a narrow cage, in which the head and anterior extremities are confined; the posterior parts are thus easily secured, while the civet is removed with a simple spatula. It has not been known to propagate in a state of confinement.

"The substance obtained from the Rasse," continues Dr. Horsfield, "agrees with the civet afforded by the large *Vicerræ* in color, consistence, and odour. It is a very favorite perfume among the Javanese, and is applied both to their dresses, and by means of various unguents and mixtures of flowers, to their persons. Even the apartments and furniture of the natives of rank are generally scented with it to such a degree as to be offensive to Europeans, and at their feasts and public processions the air is widely filled with this odour."

The perfume of the Civets is rank and strong, and has long ceased to be in request, except for admixture with other scents, among the civilized nations of Europe.

* Journ. As. Soc. Ben. xv., 199.



THE RASSE.
VIVERRICULA MALACCENSIS.

THE RATELS.

Mellicora capensis & *M. indica*.

PLATE IX.

THE Ratels or Honey-bears of India and Africa are certainly amongst the most popular objects to be found in the Society's collection. Throughout the summer months their sportive actions and never-failing somersaults attract a host of visitors. Instead of depicting these animals in their natural haunts, as has been usually done in these Sketches, Mr. Wolf has portrayed the whole party at play in their well-known cage in the Regent's Park Gardens, with a group of spectators admiring their gambols.

The South African Ratel (*Mellicora capensis*), is readily known from its Indian congener by the broad white stripe running along each side of its back. Sparrman—a Swedish naturalist of the last century, and a recognized authority upon the animals of the Cape—tells us some extraordinary facts concerning it, which, like many other stories of the older authors, have not been confirmed by subsequent observers. The bees, according to Sparrman, furnish the Ratel with his principal if not his only means of subsistence. "These insects are accustomed to take up their abode in holes in the earth formed by various burrowing quadrupeds; and the Ratel is endowed with peculiar sagacity for discovering their nests, which it undermines with its powerful elaws, in order to feast upon the honey contained in them. Aware that sunset is the period at which the bees return to their homes, it chooses that time for making its observations, which are conducted in a very curious manner. Seated upon the ground with one of its paws raised so as to shade from its eyes the rays of the declining sun, it peers cautiously on either side of this singular kind of parasol, until it perceives a number of bees flying in the same direction. These it carefully marks, and follows in their track until it has safely lodged them in their nest, which it immediately commences pillaging. But if it should happen that contrary to their usual custom, they have built in the hollow of a tree, the Ratel, being unable to climb and angry at its disappointment, wreaks its vengeance upon the senseless stock by biting around it; and the Hottentots know well that such marks on the trunk of a tree are certain indications of a bees' nest being contained within it."

Such is Sparrman's account of the African Ratel, and although numerous travellers have investigated the Natural History of the Southern part of Africa since his time, I cannot discover that any one of them has given us more authentic details concerning its mode of life. Of the habits of its Indian representative we have more reliable information from several writers.

The Indian Ratel (*Mellicora indica*), is, as already pointed out, externally recognizable by the want of the white stripes on the flanks, and internally by several characters pointed out by Mr. Burton in an article on this animal, published in the Zoological Society's "Proceedings" for 1831. "It is impossible," says Mr. Burton, in the course of his observations, "to examine this animal, even in the most cursory manner, without coming to the conclusion that it is wonderfully adapted for making its way beneath the surface of the earth. The powerful fore leg, armed with enormous claws; the cuneiform head; the face deprived of hair; the minute and sunken eye; the entire absence of external ear; the strong and muscular neck and shoulder; the comparative diminution of the posterior extremities, whereby the bulk of the hinder parts is lessened; the naked abdomen; all unite to characterize it pre-eminently as a digger. And in fact, among the populations of its native regions it is said that it seeks its choicest food in the cemeteries, and such is its dexterity in tearing open the graves of the dead, that no tomb is sacred from its attacks. The latter part of this account is probably in some degree overstated; but it has at all events in those parts obtained the appellation of the *Gravedigger*. The generic name of Storr, *Mellicora*, although it may suit the African species is consequently peculiarly inappropriate in reference to this."

The Indian Ratel is stated by General Hardwicke to be found on the high banks of the Ganges and Jumna, in the upper provinces. Mr. Hodgson records its occurrence likewise in the lower hill-region of Nepal. For the living examples of the species now in the collection, from which Mr. Wolf's figures are taken, the Society have to thank the liberality of one of their Corresponding Members, Mr. Arthur Grote, of Alipore, Calcutta.

A specimen of a third species of Ratel (*M. leuconota**) from Western Africa, distinguished by its smaller size and wholly white back has recently been added to the Society's collection.

*Described and figured Proc. Zool. Soc., 1867, p. 98, pl. vii.



THE RATELS.
MELLIVORA CAPENSIS & M. INDICA.

THE BINTURONG.

Artictis binturong.

PLATE X.

A FINE male specimen of the Binturong was presented to the Zoological Society in 1855, by Mrs. Samuel Rawson, and lived in good health nearly eleven years in the Gardens. It is believed to have been the only example of this scarce animal ever exhibited alive in Europe.

The Binturong was discovered in Malacca by Major Farquhar, about the year 1819. It was first described by Sir Stamford Raffles in a Memoir on the Zoology of Sumatra, which was read before the Linnean Society in 1820, and is printed in the thirteenth volume of their "Transactions." Sir Stamford Raffles referred the Binturong to the Civet-cats (*Viverra*), to which it is certainly allied, but it may perhaps, be more naturally arranged near the Kinkajou (*Cercoleptes*), within the confines of the family of the Bears (*Ursidae*).

The Binturong is an animal with a long heavy body and slouching gait, more or less nocturnal in its habits. It seldom moves about much during the day time, but remains coiled up and covered with its long bushy tail, somewhat after the manner of the Great Ant-eater. It is a native of Sumatra and the Malayan peninsula, but ranges northwards through the Burmese countries, as far as Assam and Nepal, whence specimens have been transmitted by Mr. Brian Hodgson.



THE BINTURONG.

ARTICTIS BINTURONG.

HOOKER'S SEA-BEAR.

Otaria hookeri.

PLATE XI.

THE Sea-bear, purchased by the Society in 1866, was certainly one of the most interesting animals ever acquired for the collection, being remarkable not only on account of its strange and peculiar appearance, but also as belonging to a group of Mammals which had never previously been seen alive in Europe. One of the great divisions of the marine Carnivores—the Phocidæ, or Seal family—is always represented in the Society's living series, by one or more individuals. A second remarkable type of the same order—the Walrus—has also been once exhibited in the Gardens, as will be seen on reference to the figures of this animal, given in the first volume of these Sketches. But the external form and appearance of the *Otariæ*, or Eared Seals, which constitute the third great division of the order of Pinnipedes, was quite unknown in Europe until the arrival of the present specimen.

This animal, which was a male, was obtained when quite young along with an individual of the opposite sex, by a French sailor, named Lecomte, in the vicinity of Cape Horn, in the month of June, 1862. The female was lost during the voyage to Europe, but the male arrived in safety, and was exhibited by its capturer in various parts of France and England, until the month of January, 1866, when it passed into the possession of the Zoological Society. Lecomte was at the same time engaged to attend upon it, and has since remained in the Society's service.

The Sea-bear lived in good health in the Society's Gardens rather more than a year, when it was seized with a violent attack of inflammation in the abdominal region, caused, it is believed, by a fish hook, swallowed accidentally in one of the fishes which formed its daily sustenance, and died in spite of every attention. During its life in the Gardens, it attracted universal attention, not only on account of its strange form, but likewise from its extraordinary docility and intelligence. It exhibited the strongest attachment to its keeper, and obeyed his slightest commands with the utmost readiness. Its food during this period consisted entirely of raw fish—principally haddocks and whittings—of which it consumed about 20 lbs. weight every day. During the summer it passed the greater part of the day-time in the water, often, however, coming out and exhibiting its singular mode of progression round the edges of the basin in which it was kept, to the delight of the admiring public. The night was usually passed in an adjoining shed fitted up for the purpose.

The use of the hind limbs in terrestrial progression at once separates the *Otariæ* from the true seals—and its mode of aquatic locomotion likewise exhibits some differences, which are described by an accurate observer as follows:—

“When swimming slowly the fore limbs only are employed in propelling the body, but when the animal wishes to swim rapidly the hinder paddles are used, and these are not swayed together from side to side, but each being brought forward laterally is then struck back against the water. In turning to left or right, the paddles of the opposite side—that from which it turns—are alone used.”

Although of great economic importance to mankind from their valuable fur, which supplies the fashionable “seal-skin coats” of our fair countrywomen, the Eared Seals are still very imperfectly known to Naturalists. Many of the recognized species rest solely upon skulls belonging to different Museums, the external form of the corresponding animal being wholly unknown. In other cases species have been established upon skins without the structure of the skulls having been examined. A third series of names has been founded upon nothing more than the vague descriptions of the earlier navigators, many of whom give the most entertaining narratives of their encounters with these animals. It has thus come to pass that, in spite of the recent efforts of Dr. Peters to set matters right, the whole group of *Otaria* is in a state of great confusion, and is likely to remain so, until our Museums are supplied with a better series of the skins and skeletons of these animals than they now possess.

Under these circumstances it was not without much doubt and hesitation that when the living animal above spoken of was acquired by the Society, I determined it to be the *Otaria hookeri*—a species established by Dr. Gray in the “Zoology of the Voyage of the Erebus and Terror.” But a close examination of the animal, since its decease, and in particular the examination of its skull, has served to show that this view was correct, and that our living animal certainly belonged to the same species as that named by Dr. Gray after the celebrated botanist who took part in the “Antarctic Expedition.” It is very possible, however, that the present animal may be the same as that spoken of by Forster in his narrative of Cook's second voyage, when after describing the “Sea-lions,” (*Otaria jubata*), met with in great abundance on New-year's Island off Staten Land, he adds that on the summit of this island they discovered “another kind of seals—Sea-bears”—and proceeds to point out the differences between them and the “Sea-lions.” Upon this somewhat vague information Lesson established his *Otaria forsteri*, so that, if it can be hereafter shown that Forster's Sea-bear could have been no other than Hooker's Sea-bear, the present animal may have to bear the name of the former Naturalist, as its permanent designation, instead of the latter.



THE SEA BEAR.

OTARIA HOOKERI.

THE PERSIAN DEER.

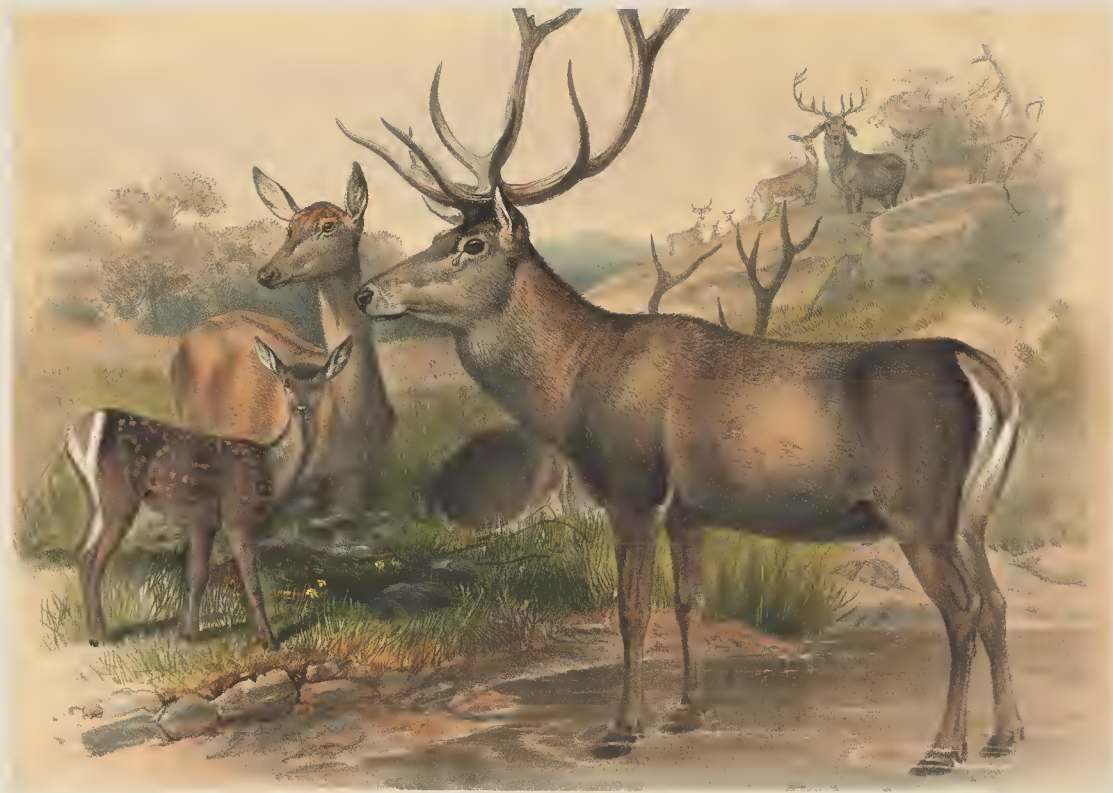
Cervus maral.

PLATE XII.

THIS fine species of Deer is nearly allied to the Red Deer of Europe, and Northern Asia, but is easily distinguished by its elongated muzzle (as is well shown in Mr. Wolf's group of figures) and by other peculiarities. Sir John McNeill, who presented two examples of the Persian Deer to the Society's Menagerie in 1840, informs us that this animal "is found in all the wooded mountain districts of Persia, but apparently does not occur in the central parts of that country. They rarely descend into the plains. During the summer they resort to the highest wooded parts of the mountains, and during the winter to the lower ravines, near their bases, where they are frequently tracked in the snow."

The original male of this Deer in the Society's Gardens, was captured in Circassia during the Crimean war, and together with a female passed into the possession of the Earl of Ducie, F.Z.S. Lord Ducie, after keeping this pair of animals three seasons at Tortworth, presented them to the Society in 1857. Since that period this species has bred in the Gardens nearly every summer, and a succession of hinds has been produced. Mr. Wolf's sketch shews the adult male and female and the young of this deer, in its spotted dress of immaturity, which is characteristic of the whole group.

For a long period, following Dr. Gray, I have been accustomed to call this animal *Cervus wallichii*, supposing it to be the stag figured in F. Cuvier's "Histoire Naturelle des Mammiferes," under that name. But I have recently convinced myself that this figure, which was taken from an animal formerly living in the Barrackpore Menagerie near Calcutta, is referable either to the Cashmirian Stag (*Cervus cashmirensis*), or to the Tibetan (*C. affinis*), and that the only scientific name strictly applicable to the present species is "*Cervus maral*"—the title by which it is designated on the plate which represents it in the "Knowsley Menagerie."



THE PERSIAN DEER
CERVUS MARAL

THE MANTCHURIAN DEER.

Cervus mantchuricus.

PLATE XIII.

THIS noble animal is one of the most recent additions made to the Society's series of the Deer of the Old World, which embraces examples of nearly every known species. The fine male, from which Mr. Wolf's figure was taken, was purchased for the Society by Mr. Robert Swinhoe, at Newchang in Northern China, in 1864, and reached the Gardens in July of that year. No second example of this Deer has yet been received in this country, but I believe there has been an individual, likewise a male, in the Jardin d'Acclimatation at Paris.

The Mantchurian Deer is nearly allied to the Japanese Deer (*Cervus sika*) and the Formosan Deer (*Cervus taivanus*), but is much larger than either of these species, and is distinguishable by other characters. When the celebrated summer palace of the Chinese Emperors, near Pekin, was destroyed by the British and French in the winter of 1860, herds of deer, which are considered by Mr. Swinhoe to have been of this species, were discovered in the surrounding parks, and fell a prey to the ruthless soldiery.



THE MANTCHURIAN DEER.

CERVUS MANTCHURICUS.

THE FORMOSAN DEER.

Cervus taivanus.

PLATE XIV.

For the discovery of this beautiful species of true Deer, as well as of many other novelties of great interest, science is indebted to the exertions of Mr. Robert Swinhoe, II. B. M.'s Vice-Consul in the island of Formosa, near the coast of southern China. Before Mr. Swinhoe's appointment to the new post of Vice-Consul in this little-known island, its zoology was quite unknown. During his year of residence in Formosa, Mr. Swinhoe not only collected dead specimens in every branch of Natural History, but also shipped several living examples of this and another new species of Deer (*Cervus swinhoi*) home to the Zoological Society.

As regards the habits of this Deer—which was named *taivanus*, from Taiwan—the Chinese name for Formosa—we cannot do better than give the following extract from Mr. Swinhoe's paper on the Mammals of Formosa, printed in the Zoological Society's "Proceedings" for 1862.

"The central and higher range of mountains, which are in parts covered with perennial snow, are inhabited by the *Cervus taivanus*. These heights abound with large masses of tangled forest, in which the gigantic *Laurus camphora* (the tree whence the drug of commerce, camphor, is distilled) forms no inconspicuous part. They are tenanted by tribes of half-clad Indians of the Malay type, blood-thirsty and savage in the extreme, who keep up a constant warfare with the Chinese colonists of the plains, and resist with atrocity any inroads into their mountain territory. On the lower hills, however, that define the land of the colonist from that of the aboriginal, dealings on a friendly footing are carried on in bartering Chinese commodities for deers' horns, venison, and other results of the chase. To these aborigines money has no value as a medium of exchange. They live on the flesh of deer and other wild animals, which they only partially broil before eating. They obtain, by barter from the Chinese, matchlocks and gunpowder, which they use to wound the deer, when approached within a few yards by creeping through the thicket. The wounded animal is then surrounded by a closing ring of half-naked savages, and, seared by their wild shouts, falls an easy prey to their metal-headed javelins. When powder fails them, they sometimes manage to intercept one from a herd, and driving him into more open country, scatter a loose and wide-spread ring of humanity around him; the ring rapidly closes in as before, and, as the frightened beast attempts to leap or break it, spears are hurled into him from all sides, and he can rarely effect his escape. Other means of capture are also practised, but less successfully: the commonest of which, when the beast is required to be taken alive, are slip-nooses attached to a stake, and so adjusted, as either to take him by the leg or by the horns. But the animal captured when full grown rarely survives, and therefore the young are sought for the purpose of rearing. They are nurtured with great care till a year old, when the horns begin to form. They are then conveyed to the borders and bartered to the Chinese, by whom, as I before stated, they are much valued.

"In the city of Taiwanfoo, I procured two bucks and a doe of this species, and forwarded them, via Hong-Kong to the Gardens of the Society; but unfortunately, only one, a buck, reached England in safety."



THE FORMOSAN DEER.

CERVUS TAIWANUS.

THE JAPANESE DEER.

Cervus sika.

PLATE XV.

THE Sika or Japanese Deer, which is one of the most recent additions to the Society's living series of this group of animals, is a native of the Japanese Islands, and was first made known to us, though somewhat imperfectly, through the researches of the Dutch Naturalist, Siebold, in that country. Little is told us in that part of the Fauna Japonica which embraces the results of Siebold's discoveries among the Mammals of Japan, further than that this Deer is abundant in many parts of the empire, and seems to represent there the Red Deer of Europe.

The Japanese Deer was first imported into England in 1860. A pair of these animals, obtained at Kanegawa in Japan, and brought to this country by Captain Rees, of the ship Sir F. Williams, were liberally presented to the Society's Menagerie by J. Wilks, Esq., in July of that year. Not being able to recognize in them the *Cervus sika* of the Fauna Japonica, Dr. J. E. Gray considered them as belonging to a new and probably undescribed species, for which he proposed the name *Rusa japonica*. There is, however, I believe, little doubt, as Dr. Gray himself now acknowledges, that they are really of the species indicated by MM. Temminck and Siebold under the name *Cervus sika*, and that name, as being the first given, must consequently be retained for them. A second female of this Deer was received by the Society from their corresponding member, Mr. Edward Blyth, of Calcutta, in September 1861, and a third imported female was acquired by purchase in the same year. The females of this Deer have constantly bred in the Society's Menagerie, and as the species is very hardy, and requires but little protection from the climate, there seems to be every prospect of its being easily established in our parks in this country.



THE JAPANESE DEER.

CERVUS SIKI.

THE RUSA DEER.

Cervus rusa.

PLATE XVI.

THE Rusine Deer of India and the neighbouring countries, form a distinct group from the true Stags (*Cervus*) of the northern parts of the Old and New Worlds. They are distinguished by their coarse uniform coat of hair and by the lesser development of their antlers, which are short in the beam, and attain but three points at most.

The Zoological Society possess examples of six Deer belonging to this group. These are the Sambur Deer of Continental India (*Cervus aristotelis*); the Rusa of Java (*C. rusa*), represented in Mr. Wolf's present sketch; the Moluccan Deer (*C. moluccensis*) of the Moluccas; the Timor Deer (*C. timoriensis*) of Timor; the Swinhoe's Deer (*C. swinhoei*) of the Island of Formosa; and the little Kuhl's Deer (*C. kuhlii*) of the Bavarian Islands. Some of the continental gardens likewise contain specimens of another species of this section—the dark-colored Equine Deer (*C. equinus*) of Borneo.

The Sambur and Rusa Deer both breed readily in the Society's Gardens, and the former animal seems to be well adapted for a Deer-park, attaining, as it does, a considerable size, and being quite hardy enough to bear our winters. The Rusa Deer is not so large, and perhaps rather more delicate, but nevertheless does well enough in the Regent's Park, without any further shelter than a boarded shed.



THE RUSA DEER.

CERVUS RUSA.

SWINHOE'S DEER.

Cervus swinhoei.

PLATE XVII.

THIS Deer deservedly bears the name of its discoverer, Mr. Robert Swinhoe, whose merits as an exploring Naturalist we have already spoken of when treating of the Formosan Deer (pl. xiv.). Of this species likewise, Mr. Swinhoe sent two living examples to the Society's collection in 1862, one of which (the subject of the present portrait) is still alive in the Menagerie.

The Swinhoe's Deer belongs strictly to the Rusine group, of which the Sambur Deer of India, and the Rusa Deer of Malacca (figured in the preceding plate of these Sketches), are well-known examples. They differ from the typical Stags in their antlers being shorter in the beam, and having fewer points—likewise in their uniform, unspotted fur, even in young animals. While the Formosan Deer inhabits the higher ranges of the island of Formosa, Swinhoe's Deer is found on the lower hills, at an altitude of from 1000 to 5000 feet. Mr. Swinhoe speaks of it as follows, in his Notes on the Mammals of Formosa, published in the Zoological Society's "Proceedings":—

"It was not until my late visit to the City of Taiwanfoo, S.W. Formosa, that I came across this species. It struck me at once as a novelty, and I managed to procure two bucks, both of which have fortunately reached the Gardens of the Society in good health. On my visit to the Tamsuy district, N.W. Formosa, I again met with the animal in a state of confinement in the hands of the Chinese, and secured a buck for the Acclimatization Society of Melbourne; but a live female I could not manage to procure. This species may at once be distinguished from the other by its total want of spots, by the absence of the white patch that adorns the parts about the tail, by its coarse, reddish-brown hair, appearing almost black in some lights; but above all, by the occurrence of a large sac between the eye and the nose. This curious organ, whatever its properties may be, it has the power of opening and shutting. It appears to be expanded most frequently when the beast is irritated. At a distance, the deer looks as if he possessed four eyes, whence the Chinese definition of this species as 'the four-eyed.' It is, however, more generally known in Formosa as the 'Cheeaug.'

The nearest ally of the present species seems to be the Philippine-Island Deer (*Cervus philippinus*), with which it requires a more exact comparison than has as yet been made.



SWINHOE'S DEER.

CERVUS SWINHOII

THE PUDU DEER.

Cervus humilis.

PLATE XVIII.

ALTHOUGH the true Stags of the type of our Red Deer are confined to the Northern parts of both hemispheres, representatives of the genus *Cervus* are found all over Southern Asia and its islands, and throughout the continent of America. One of the smallest of the known species of the whole group, is the Pudu Deer of Chili. The height of this animal does not exceed a foot and a half between the shoulders, and offers a marked contrast to that of its gigantic congener, the Wapiti, of which a portrait has been already given in the first volume of these "Sketches."

The Pudu, although believed to have been indicated long ago by Molina in his history of Chili, is still imperfectly known in Europe. The individual of this species, which lived for some months in the Society's Gardens in 1830, and upon which Mr. Bennett founded his *Cervus humilis*, was a female, and the same was the case with an example obtained at Concepcion by Captain King. Mr. Wolf's drawing was taken from an individual living in the Society's Gardens in 1854, which was likewise a female, and it has been doubted whether the male of this species ever bears horns or not. These doubts, however, have been lately set at rest by the acquisition by the Zoological Society in 1866 of a male example of this little Deer, presented to the collection by Mr. Charles Bath, of Ffynone, Swansea. This specimen, as will be seen by the accompanying



woodcut, bears on its head a pair of small straight horns without any branches, measuring about two inches in length.



THE PUDU DEER.

CERVUS HUMILIS.

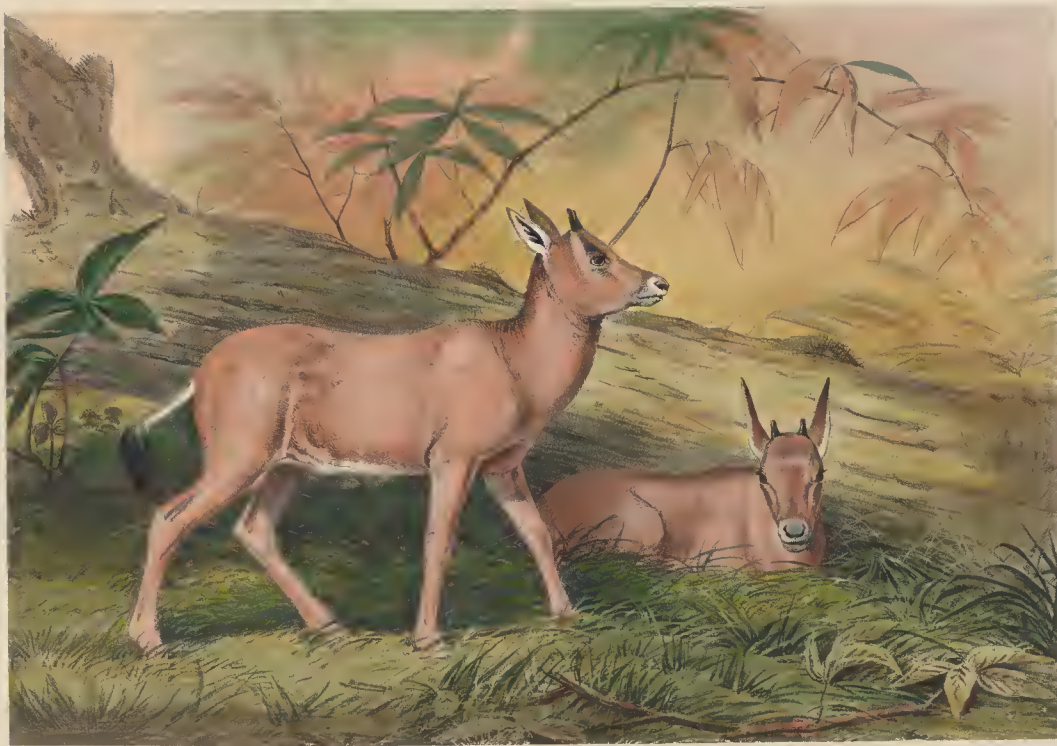
THE LEUCORYX.

Oryx leucoryx.

PLATE XIX.

IN the first series of the Illustrations (pl. xxiii.) I have already figured the adult form of this beautiful Antelope. I now give a reproduction of Mr. Wolf's drawing of the young animal, which, it will be observed differs materially in shape and colour from its parents.

As has been already stated, the Leucoryx now breeds very regularly in the Society's Gardens, as well as in several similar establishments on the Continent. The calf, from which the present sketch was taken, was born in 1851, and was about six months old when it became the subject of Mr. Wolf's pencil.



THE YOUNG LEUCORYX.

ORYX LEUCORYX.

THE MARKHORE.

Capra megaceros.

PLATE XX.

THE Markhore is, as we are told by Captain Hutton, its first describer under the name *Capra megaceros*, an inhabitant of the mountain districts of Afghanistan, especially of the lofty crags of the Sooliman and adjoining ranges. Northwards, towards Cabul, it chooses the most inaccessible crags for its retreat, and is remarkable even among its agile brethren of the same genus for its extraordinary strength and activity. A very similar species, from Cashmere, was first obtained by Baron Von Hügel during his researches in that country, and was described by Professor Wagner, in 1839, as *Capra falconeri*; but as there is some little doubt as to whether the Cashmere Goat is the same as the Punjab animal, it is preferable to retain for the latter the name which Captain Hutton has bestowed upon it.

The specimen of this fine animal now figured, which is believed to be the first example ever seen alive in Europe, was received in 1856, having been brought home from India and liberally presented to the Menagerie, by Colonel Samuel Brown, of the 2nd Punjab Cavalry.

During this animal's existence in the Society's Menagerie, he bred several times with Goats of different varieties, and produced some very fine hybrids. Since his death in 1865 his place has been filled by a pair of the same species, presented to the Society by Major F. R. Pollock, Commissioner at Dera Ismail Khan.

The Markhore has been considered by some authors as simply a variety of the Domestic Goat, but its claims to be recognized as a good and very distinct species are now generally admitted, though there is still much confusion prevailing among the different species of Wild Goats.

Captain Hutton gives us the following account of the origin of the name of Markhore:—

“The name of ‘Markhore’ or ‘Snake-eater,’ is given to the animal by the Affghans, from an idea that it has an instinctive feeling which prompts it to seek for and devour snakes. Hence it is believed also, that if a man be bitten by a snake, the wound may speedily be healed, and the poison neutralised, by eating of the flesh of the Markhore. The hunters also declare that the fat of the stomach is so excessively nutritious, that it enables them to pursue the chase with greater vigour than any other food, and even after one meal of it, to endure a fast for several days.”



THE MARKHORE.

CAPRA MEGACEROS.

THE Aoudad.

Ovis tragelaphus.

PLATE XXI.

THIS conspicuous species of Wild Sheep is found all along the range of the Atlas in North Africa, and extends itself, according to Dr. Rüppell, throughout Egypt and Nubia, down as far south as the 18th degree of latitude, being known by different native names in the countries in which it occurs. It inhabits the mountain-ranges, and is generally met with grazing in small families, after the manner of most of its brethren of the same genus.

The Aoudad is now well known in the Zoological Gardens of Europe, both sexes of this Sheep, having been frequently obtained from different parts of the north coast of Africa, and young having been produced in the Gardens of the Société Zoologique d'Acclimatation at Paris, of the Société de Zoologie of Brussels, and in other collections of living animals, as well as in our own.

Mr. Wolf's sketch represents the fine adult male of the Aoudad, presented to the Society in 1861, by Sir J. Gaspard Le Marchant, then Governor of Malta. The female, which in this species of Sheep scarcely differs from the male, except in her smaller size, was presented to the Society by Her Majesty the Queen, in 1862. The lamb, which was born in April of the same year, is from a different mother.

The uniform brown colour of the Aoudad, the long mane which clothes its throat and fore-limbs, and the want of the lachrymal sinus, renders this species easily recognizable amongst its congeners of the genus *Ovis*. The latter character has led some naturalists to arrange the Aoudad amongst the Goats. This, which is, no doubt, erroneous, though such a difference affords good grounds for its location in a separate sub-genus, as has been suggested by Mr. Blyth.

The '*Aoudad*' is the name by which this Sheep is known among the Arabs of Algeria. Here, we are informed by Mr. Tristram, in his interesting work on the "Great Sahara," it is "far from uncommon throughout the whole of the mountain districts, whether wooded or bare. The officers of Laghouat frequently pursue them, but the chase is attended with no little difficulty, for they betake themselves at once to the highest cliffs and rocks, and bound up the most inaccessible precipices."



THE AOUDAD.
OVIS TRAGELAPHUS.

THE ANDAMAN PIG.

Sus andamanensis.

PLATE XXII.

THE Andaman Islands lie off the Burmese Coast, in the middle of the Bay of Bengal, and were, until lately, little known, except as the abode of a peculiar race of degraded savages of rather doubtful origin. Within the last few years, however, a penal settlement for the convicts of our Indian Empire has been established at Port Blair, on one of the islands. An intercourse has thus sprang up with Calcutta, which has enabled Mr. Blyth, late Curator of the Asiatic Society's Museum in that city, to obtain specimens of many of the zoological products of this hitherto *terra incognita*. A considerable portion of these turned out to be new to Science, and amongst them was the present species of Pig, which was first noticed by Mr. Blyth in the Journal of the Asiatic Society of Bengal for 1858, under the name *Sus andamanensis*.*

The Andaman Island Pig is at once remarkable, amongst its brethren of the same genus, for its very shortened profile, short rounded body, and small ears and limbs. It is thickly covered with short black hair, and has somewhat the general appearance of an American Peceary.

The Society's original specimen of this animal, which is believed to have been the first ever imported into Europe, alive or dead, was obtained through Mr. Blyth. Mr. Blyth, we believe, received it through Lieut.-Col. R. C. Tytler, a well-known Indian Naturalist, lately Governor of the settlement at Port Blair. Other examples of the same species have since been received through the exertions of Dr. John Anderson, Curator of the Indian Museum, Calcutta, who acts as Honorary Agent for the Society in that city.

* Journ. As. Soc. Bengal, xxvii., p. 267.



THE ANDAMAN FIG.

SUS ANDAMANENSIS.

THE COLLARED PECCARY.

Dicotyles torquatus.

PLATE XXIII.

No true Pigs are found wild in the New World, but their place is taken by Peccaries, which are different in structure, although equally belonging to the family of Swine or *Suidæ*. They are remarkable for the possession of a gland situated above the posterior vertebræ, which gives them a very strong and disagreeable odour. To render their flesh palatable as an article of food, it is said to be requisite to remove this gland directly after death.

Two species of Peccary only are at present known to exist, the present or Collared Peccary, and the rather larger White-lipped Peccary. Specimens of both these animals are usually exhibited in the Society's Menagerie. The Collared Peccary has a wide distribution in the New World. It occurs all through Central America and Mexico, in suitable localities, ranging as far north as the Red River of Arkansas, in Lat. 44° N. In South America it was found in Guiana by Schomburgk, and in the Eastern Wood-region of Peru by Tschudi. It is likewise met with in Brazil and Paraguay, and has been recorded by D'Orbigny as having been seen as far south as the Rio Negro in Northern Patagonia.

The Collared Peccary breeds readily in captivity. Mr. Wolf's plate represents a female of this species, in company with her young ones, which appear never to exceed two in number.



THE COLLARED PECCARY.

DICOTYLES TORQUATUS

THE AFRICAN ELEPHANT.

Elephas africanus.

PLATE XXIV.

WHILE the Indian Elephants have always formed one of the most prominent features in the collection of animals belonging to the Zoological Society of London ever since the first institution of their Gardens, the African form of this huge animal has until the last few years remained unrepresented in the series. As, however, the Indian and African Elephants are very distinct in outward form as well as in inward structure, the Council of the Society have long been desirous of obtaining examples of the latter species, so that the two might be exhibited together side by side. It was not, however, until the summer of 1865 that these wishes were realized, and the first specimen of the African Elephant was received in the Society's Gardens. This was a young male, supposed to be about five or six years old when he arrived, acquired from the Jardin des Plantes, Paris, in exchange for an Indian Rhinoceros. A few months later, singularly enough, two small female African Elephants came into the London market. The best of these was purchased by the Society for the sum of £500, and a pair of this animal thus brought together—for the first time, it is believed, since the days of the Roman Empire—in Europe.

The most striking external character of the African Elephant as compared with his Indian brother, are the enormous ears and the convex outline of the forehead. There are likewise very marked differences in the structure of the teeth of the two animals, and in the conformation of the cranium. These, however, I need not further allude to except to say that they are sufficient to shew that these two animals, now the sole living representatives of their race, when intercalated in their proper place in the series of fossil Elephants, must be referred to two different sections of the group.

The range of the African Elephant is at present confined to Africa south of the Sahara, but in bygone ages extended as far northwards as the south of Europe, where its fossil remains are often found. In the neighbourhood of the settled portions of Africa, and indeed in nearly every part of the Cape Colony, it may also be looked upon as an extinct animal, having been driven away and exterminated by the advancing tide of civilization. But explorers of the unknown interior, such as Speke, Livingstone, and Baker, still meet with this animal in enormous herds, and large quantities of ivory—the product of its tusks—are imported from these regions every year into Europe.

It is generally supposed that the African Elephant is naturally inferior to the Indian in sagacity and tractability, and consequently less competent to be useful to mankind as a trained animal. As far, however, as our experience goes with the African Elephants now in the Zoological Society's Gardens, there seems to be no grounds for such a supposition. It is quite certain that, in modern times at least, the African Elephant has never been employed as a trained animal for the use of mankind, but this is probably due more to the inferiority of the race of man which tenants the area to which the African Elephant in a state of nature is restricted, than to any innate difference between the capacities of the African and Indian animal. It is certain, as Sir J. Emerson Tennent remarks, when speaking of this very point, that the Elephants which excited the wonder of the spectators in the Roman Amphitheatres in the days of Cæsar and Pliny, were brought from Africa, and acquired their accomplishments from European instruction—a sufficient proof that under equally favourable auspices, the African species is capable of developing docility and power equal to that of India.*

* "The Wild Elephant," (1867) p. 151.



THE AFRICAN ELEPHANT.

ELEPHAS AFRICANUS.

THE THREE-TOED SLOTH.

Bradypus tridactylus.

PLATE XXV.

THIS present sketch was taken mainly with the object of showing the method in which the young is carried by the mother in the case of the peculiar animals known as Sloths, which form the genus *Bradypus* of Linnaeus. The young Sloth has been frequently represented in the works of Natural History as being carried on the back of its parent. The acquisition of a fine female of the Three-toed Sloth together with a young one probably not many months old, for the Zoological Society's collection in the summer of 1865, enabled us to note that this is not correct. While the mother pursues her way with her back nearest the earth along the lower surface of the branches of the forest, the little one lies, face downwards, comfortably placed on her breast, and clutching so tightly round the shaggy body of its parent, as not to be detached without very great difficulty. In this position it is most conveniently placed as regards access to the mammae of the mother, which are situated upon the breast.

The Sloths brought alive to Europe usually belong to the two-toed division (*Bradypus*) but the rarer Three-toed Sloth (*Choloepus didactylus*) is also occasionally imported, and has been exhibited on more than one occasion in the Society's Menagerie. The Sloths are only found in a state of nature in the tropical forests of Central and Southern America. In his well-known "Wanderings," the deceased traveller Waterton speaks of their occurrence in British Guiana in the following terms:—

"This too is the native country of the Sloth: His looks, his gestures, and his cries, all conspire to entreat you to take pity on him. These are the only weapons of defence which nature has given him. While other animals assemble in herds, or, in pairs range through these boundless wilds, the Sloth is solitary and almost stationary: he cannot escape from you. It is said his piteous moans make even the tiger relent and turn out of the way. Do not, then, level your gun at him, or pierce him with a poisoned arrow—he has never hurt one living creature. A few coarse leaves, and those of the commonest and coarsest kind, are all he asks for his support."



THE THREE-TOED SLOTH.

BRADYPUS TRIDACTYLUS.

THE RED KANGAROO.

Macropus rufus.

PLATE XXVI.

THE Red Kangaroo is one of the largest of the peculiar Australian group of Marsupial animals to which it belongs, and is likewise one of the most beautiful in colour and elegant in form. The sexes are very different both in size and colour, the male being of a fine orange-red, while the female is much smaller, and of a nearly uniform blue-grey.

The range of this Kangaroo, as Mr. Gould informs us in his great work on the Mammals of Australia, "extends over the plains of the interior of the colonies of New South Wales and South Australia. It does not so strictly affect the rich grassy plains as the great Kangaroo (*Macropus major*), but evinces a greater partiality for the sides of the low stony hills and the patches of hard ground clothed with box intersecting the alluvial flats."

The Zoological Society had for several years only a solitary male of the Red Kangaroo in their Menagerie. This animal, which had been for some time a cripple, died in the course of the year 1860, but has been recently replaced by individuals of both sexes of the same species.

It is much to be wished that these animals may be induced to propagate their kind in captivity, so that this fine kangaroo, which is now very scarce, even in Australia, may be perpetuated in Europe. This has been already effected in the case of the Bennett's Kangaroo (*Macropus bennetti*) and the Derbyan Kangaroo (*Macropus derbyanus*), besides other species, which breed every year in the Society's Gardens.



THE RED KANGAROO.
MACROPUS RUFUS.

THE HAIRY-NOSED WOMBAT.

Phascolomys latifrons.

PLATE XXVII.

A FIGURE of the Tasmanian Wombat, the commonest and best-known species of this peculiar Australian form, has already been given in the first series of these Illustrations. Mr. Wolf's present drawing portrays another most distinct species of Wombat, of which we have long had the skull in our collections, although we have only lately become acquainted with the living animal itself.

In the spring of 1862, the Zoological Society of London received from the Acclimatisation Society of Melbourne two Wombats of this new species. These had been brought to Melbourne from South Australia, the common Wombat of Victoria being quite a different animal, more nearly allied to, if not identical with, the Tasmanian Wombat. This South-Australian Wombat is, however, readily recognizable by very trenchant characters. Its long pointed ears strike the observer at first glance as being different from those of the *Phascolomys ursinus*. The muzzle clothed with dense coarse white hair, offers another very marked difference, and led me to suggest the name *lasiorhinus*, under which Mr. Gould has described and figured this species in his "Mammals of Australia," as being peculiarly appropriate to the species. But as has been recently shown by Dr. Murie,* Mr Gould's term must give way to the prior appellation of Professor Owen, who first characterized this species from its cranial peculiarities in 1845, and proposed to call it *latifrons*.

Much more information is requisite concerning the habits, ranges, and other particulars of the history of the Australian Wombats, before our knowledge of this subject can be deemed in any way complete.

* Proc. Zool. Soc. 1865, p. 838.



THE HAIRY-NOSED WOMBAT.

PHASCOLOMYS LATIFRONS.

THE SATIN BOWER-BIRD.

Ptilonorhynchus holosericeus.

PLATE XXVIII.

THE Bower-Birds of Australia, which are generally kept in the large Aviary to the right hand of the principal entrance of the Regent's Park Gardens, are usually considered amongst the most attractive objects to visitors in the whole establishment; the habits of the present species, which is the only one of the group yet received alive in England, as well as those of the allied genera, *Ælurochus* and *Chlamydodera*, being extremely singular and interesting.

Long before the construction of their nest, and independently of it, these birds form with twigs skilfully put together and firmly planted in a platform of various materials, an arbour-like gallery of uncertain length, in which they amuse themselves with the most active glee. They pursue each other through it; they make attitudes to each other, the males setting their feathers in the most grotesque manner, and making as many bows as a cavalier in a minuet. The architecture of the bower is excessively tasteful, and the ornamentation of the platform on which it stands is an object of constant solicitude to the birds. Scarcely a day passes without some fresh arrangement of the shells, feathers, bones, and other decorative materials, which they bring from long distances in the bush for this purpose. With the same object they immediately appropriate every suitable fragment placed within their reach when in confinement.

The first account of the architecture of the Bower-Bird was published by Mr. Gould in 1841, and the subject is fully treated of, with characteristic illustrations, in his great work on the Ornithology of Australia.

Six species of Bower-Birds are now known to occur in different parts of the Australian continent. The bushes of New South Wales are tenanted by the present species and the nearly-allied Cat-Bird (*Ælurochus smithii*). The four species of *Chlamydodera* have a wider distribution, *C. maculata* being alone found in the interior of New South Wales, while *C. guttata* is confined to Western Australia, and the genus is represented in the northern districts by *C. muchalis*, and the recently discovered *C. cerviniventris*. The Spotted Bower-Bird (*C. maculata*) builds a very large bower, in some instances nearly three feet in length, and ornaments the entrances to it with smooth stones, bones, and shells, in enormous quantities.



THE SATIN BOWER BIRD.
PTILONORHYNCHUS HOLOSERICEUS

THE CONCAVE-CASQUED HORNBILL.

Buceros bicornis.

PLATE XXIX.

THE Hornbills, or *Bucerotidae* of Naturalists, constitute a very singular and very distinct family of birds, allied, according to the best authorities, to the King-fishers (*Alcedinidae*) and the Hoopoes (*Upupidae*), but readily known, in most cases, by the great size of the bill, which organ, in some species, attains prodigious dimensions.

According to Mr. Wallace, to whom we are indebted for some interesting notes on this family of birds, upwards of forty species of Hornbills are now known to science, of which about half are found in Africa, and the other half in Southern Asia and the larger Asiatic Islands. One of the finest species of the whole group is the Concave-casqued Hornbill, which inhabits the hill-forests throughout India, and extends along the Malayan peninsula into Sumatra. As long ago as 1833, a single specimen of this curious bird was living for a short time in the Society's Gardens, but it was not till the summer of 1864 that the species was established as a permanent denizen of our Aviaries. In July of that year two specimens of the Concave-casqued Hornbill were brought to England in excellent condition by Mr. Thompson, the Society's head keeper (who had been sent out to Calcutta to bring home a collection of interesting animals offered to the Society by its various correspondents in the East), and have since lived in good health in the Regent's-park Gardens.

In Nepal this Hornbill is called the "Homrai," or "King of the Jungles," and tenants the lower ranges of the hills contiguous to the plains, extending up to an altitude of from 3000 to 5000 feet. Mr. Hodgson tells us that it particularly affects the Burr and Pipul trees (*Ficus religiosa* and *F. indica*), loving the lofty perch which these monarchs of the forests afford, and being passionately fond of their fruit. "The Homrai," continues the same author, "is gregarious, of staid and serious manners and motions, full of confidence and quietness, and seeming to prefer the few open and cultivated spots in the wilds it inhabits; which spots are usually limited to the banks of rivers. There perched on the top of some high fantastic Burr-tree, you may see this large, grotesque, and solemn bird sit motionless for hours, with its neck concealed between the high shoulders of its wings, and its body sunk upon its tarsi. Occasionally it will take a short flight, accompanied by one or two companions (for it is a social bird), to some other high tree; never, so far as I have observed, alighting on the ground, nor on a low tree. Twenty or thirty birds are commonly found in the same immediate vicinity, six or eight upon the same tree, if it be large; and they will continue perched for hours with the immovable gravity of judges, now and then exchanging a few syllables in the most subdued tone of a voice as uncouth as their forms and manners. This subdued articulation is not louder than, and is similar in character with, the low croaking of a bull-frog. But if the remorseless gunner intrude upon this solemn congress, and bring down, without mortally wounding, one of its members, the clamours of the captive bird will utterly amaze him. I cannot liken this vehement vociferation to anything but the braying of a jackass; its power is extraordinary, and is the consequence of an unusually osseous structure of the rings of the trachea and of the larynx."

Like other Hornbills the present species makes its nest in a hollow tree, and exhibits some very remarkable habits during its incubation, of which Mr. Wallace speaks as follows:—

"As soon as the female has deposited her eggs the male imprisons her in the tree by closing up the entrance with clay and gummy substances, leaving only a small hole out of which she puts the tip of her bill to receive the fruits with which he keeps her well supplied. She is kept shut up in this manner, some say, till the young are hatched, others, till they are fledged. In the interior of Sumatra, in January 1862, one of my hunters brought me a male Concave Hornbill (*Buceros bicornis*), which, he told me, he had shot when in the act of feeding its mate. On going with him to the spot, I saw a hole in the trunk of a large tree, about twenty feet from the ground, out of which the bill of a hornbill was partially protruding. With great difficulty I persuaded some natives to climb the tree and bring me the bird, which they did, alive; and along with it a young one, apparently not many days old, and a most remarkable object. It was about the size of a half-grown duckling, but so flabby and semi-transparent as to resemble a bladder of jelly furnished with head, legs, and rudimentary wings, but not a sign of a feather, except a few lines of points indicating where they would come."

This remarkable habit was long considered to exist only in the imagination of the natives, but the story has recently been confirmed by various independent observers, and, there can be no doubt, is strictly founded on fact.



THE CONCAVE-CASQUED HORNBILL.

BUCEROS BICORNIS.

THE RHINOCEROS HORNBILL.

Buceros rhinoceros.

PLATE XXX.

OF this large Hornbill, which, as regards the shape of its bill, is still more remarkable than the preceding species, the Society's aviary contains but a single specimen, which was received at the same time as the latter, and is believed to be the only bird of the kind ever brought alive to this country.

The Rhinoceros Hornbill inhabits the Malayan peninsula and Sumatra, being replaced in Borneo, Java, and the Philippine Islands by several nearly-allied races or species, which exhibit slight differences in the form of the casque and in the width of the black tail-band.

Mr. Wallace gives us the following account of this species, as observed by himself in Sumatra and Borneo:—

“The Rhinoceros Hornbill sometimes exceeds four feet in length, and exhibits the greatest size reached in the Passerine order of birds. The exertion of flying is so great, that it generally rests at intervals of about a mile on some very lofty tree, whence after a few minutes, it resumes its flight. In some of the interior villages of Sumatra and Borneo, where a gun is never heard, they will settle upon and even build in trees in the village itself; but in more populous districts, where guns and Europeans abound, they are very shy, and take flight on seeing a man even at a considerable distance.

“It is interesting to watch their motions when settled upon a fruit-tree. Their weight is so great that they cannot venture out on the smaller branches, nor can they cling to the twigs or flutter among the foliage like the smaller fruit-eating birds. They cannot even hop readily from branch to branch, their short legs only serving to support their massive body. On first alighting, they look cautiously round till they discover some spray of fruit hanging within reach of the branch they are upon, when they move sideways towards it by a sort of shuffling hop, and then stretching out their long neck, seize a fruit by the extreme point of the bill. To swallow it now they have got it is, however, no such easy matter, for the tongue not being adapted for deglutition, they are obliged to jerk down every mouthful by suddenly throwing back the head and at the same time opening the bill, by which action the fruit is of course thrown down the throat. This habit has given rise to the statement that this bird, as well as the toucan, throws its food up in the air before eating it; but a careful observation of the birds feeding in a state of nature, proves that the fruit never leaves the point of the bill except to be jerked down the throat. The action, however, so much resembles that of catching something in the mouth that the mistake is easily accounted for. Having finished all the fruit within reach of one branch, the bird, with much deliberation, takes flight to the opposite side of the tree, where the same operation is repeated till all the fruit that can be easily reached is exhausted. This is, of course, soon done, and it therefore happens that Hornbills seldom visit a fruit-tree more than two or three days consecutively; whereas pigeons, barbets, bulbuls, and other fruit-eating birds may be found on the same tree daily for as many weeks. The discovery of a dinner every day in the year must doubtless be sometimes a matter of difficulty to the larger Hornbills, and they are often obliged to resort to other kinds of food.”



THE RHINOCEROS HORNBILL.

BUCEROS RHINOCEROS.

THE SPOTTED EAGLE.

Aquila naxia.

PLATE XXXI.

ALTHOUGH only met with as an occasional straggler in the British Islands, the Spotted Eagle is by no means scarce in many parts of the European continent. In Lithuania M. Constantin Tyzenhauz, who has contributed some interesting notes on the Eagles of the district in which he lives to the "Revue Zoologique" for 1846, informs us that this species is the most common of all, and a similar statement with regard to Pomerania, has been made by Dr. Krüper. The bird, in fact, occurs throughout Eastern and Southern Europe, though not usually in such abundance. In Egypt it is said to be generally distributed, and rather numerous. Mr. Blyth informs us that it is common in the hilly parts of India, and even in the Bengal Sundarbans.

Some interesting particulars respecting the mode of indification of the Spotted Eagle in Bulgaria were communicated to "The Ibis" for 1861, by Mr. W. H. Simpson. In that country it would seem to be as common as it is in Lithuania or Pomerania. It is not difficult to please, according to all accounts, as to the situation of its nest, for in a district where an abundant supply of food is to be obtained, but where lofty trees are scarce, it will content itself with a pollard willow not much above a man's height, or if trees be altogether wanting it will accommodate itself on the grass—a strong contrast to the highly poetical notions of the rocky fortresses popularly associated with the idea of Eagles' eyries. Yet with all this *Aquila naxia* is a true Eagle, for the characters, which have led some Ornithologists to separate it from the larger species, such as the Golden and Imperial Eagles are of very slight importance, and the circumstance of the adaptability of its economy to the physical features of the various countries it inhabits is one which occurs among many birds of prey—even the noblest. In his "Ootheca Wolleyana," Mr. Alfred Newton mentions instances of the Gyr-Falcon occupying a nest on a tree instead of a rocky ledge, and others of the Peregrine Falcon condescending to form a nursery on the ground—the motive in both cases being probably the same as that above suggested, namely, the facility of procuring a good living afforded by the locality.

The Spotted Eagle is rarely to be seen in captivity. Mr. Wolf's drawing was taken from an individual living in the Society's Gardens in 1852.



THE SPOTTED EAGLE.

AQUILA NÆVIA.

SCHEMMERRING'S PHEASANT.

Phasianus scemmerringi.

PLATE XXXII.

THIS beautiful species of true Pheasant is a native of Japan, and was discovered by Van Siebold, whose meritorious efforts in investigating the Fauna and Flora of that country are well known. Specimens transmitted by Van Siebold to the Leyden Museum were described by Temminck in his "Planches Coloriées" in the year 1828, and named after Professor Scemmerring, a distinguished German Anatomist. Little more was added to our knowledge of this splendid bird until the visit of Commodore Perry's squadron to the Japanese Seas in 1854, when examples of it were obtained in the vicinity of Simoda. According to the notes of Mr. Heine, the artist of that expedition, this Pheasant appeared to be abundant over the southern and middle parts of the Island of Nippon, inhabiting the briars and thickets on the low hills of that country.

A few years ago, living examples of Scemmerring's Pheasant were received by some of the continental Societies, and in June, 1864, Mr. Reginald Russell, lately attached to the British Embassy in Japan, succeeded in bringing alive to this country no less than fourteen birds of this fine species. Two pairs of these were purchased for the Zoological Society's collection, and from them Mr. Wolf's sketches have been taken.

The males of this Pheasant are wild and fierce in captivity, and appear to be by no means apt subjects for acclimatization. It has thus happened that in spite of unceasing efforts the Zoological Society has not yet succeeded in inducing this fine species to reproduce itself in this country, nor, we believe, have the sister Societies of the continent been, hitherto, much more successful.

Mr. Gould has lately described what we consider to be little, if anything, more than a variety of this species, which has the upper tail-coverts and wing-feathers margined with white, as a new species, under the title *Phasianus scintillans*.*

* Annals of Natural History, series 3, vol. xvii., p. 150.



SÆMMERRING'S PHEASANT.

PHASIANUS SÆMMERRINGII

REEVES' PHEASANT.

Phasianus reevesii.

PLATE XXXIII.

A LIVING male of this magnificent Pheasant was brought to England as long ago as 1831, having been presented to the Society by Mr. John Reeves, F.Z.S., then of Canton, after whom the species had been previously named by Messrs. Hardwicke and Gray. Specimens were again successfully transmitted to the Society by Mr. Reeves in 1838, and bred in the Gardens without difficulty, although the species was subsequently lost from the number of individuals being insufficient to allow for casualties. During the past few years great efforts have been made to re-introduce this ornamental bird to our Aviaries, and at present there seems to be every prospect of a successful result. The Zoological Society's Gardens now contain a fine pair of this Pheasant, imported into England along with others of the same species in the course of the year 1867 by Mr. John J. Stone, F.Z.S., which show every symptom of being likely to do well.

The Reeves' Pheasant is an inhabitant of Northern China. Dr. Lamprey, who made great exertions to send this bird alive to the Society in 1862, though these unfortunately were not successful, purchased his specimens in the market of Tient-sin, the port of Peking, stating that he believed them to have been obtained from the Tung-lin or eastern burial-place of the Emperors, north of Peking. It appears, however, to be the custom to place all kinds of game in the extensively enclosed grounds of the Imperial burial-places, so that this may not be their natural locality. That this is the case, would also appear from some notes, recently communicated to the Zoological Society, concerning the Pheasants met with in the neighbourhood of Peking, by Mr. Dudley E. Saurin, lately attached to Her Majesty's Legation in that capital. Mr. Saurin speaks of this bird as follows:—

"The Reeves' Pheasant (*Ph. reevesii*), called by the Chinese "*Chi-chi*," is seen very rarely in the Peking Market. For a long time I failed to discover from what quarter they came, as some specimens had been obtained at Tient-sing, and people pretended they had been brought from Shantung. Last winter, however, I ascertained that they came from the Tung-lin, and I have reason to suppose that they are to be found nowhere else in the province of Chi-li. About twenty birds were brought down alive last winter. They are never brought in frozen or by the Mongols. Their flesh is very delicious, and superior, to my taste, to that of any other pheasant."

Mr. Swinhoe informs me that this Pheasant is stated by the Chinese to be found wild in the Taihoo district, Central China, on the north side of the Yang-tze-Kiang. That this is true is rendered more probable by the fact that Mr. Stone's birds, now in the Society's Gardens, were received from Hankow, which is high up the Yang-tze-Kiang.



REEVES' PHEASANT.

PHASIANUS REEVESII.

THE RUFOUS-TAILED PHEASANT.

Euplocamus erythrophthalmus.

PLATE XXXIV.

THE female of this Pheasant is a very singular bird, differing, as will be seen by reference to Mr. Wolf's figure, from the male in having the whole plumage of a nearly uniform purply black, instead of a sober hue of brown, as is usual in the other species of this group. It is, moreover, remarkable for its large spurs, which are not generally so much developed in the female sex. Under these circumstances it is not to be wondered at that it has usually been considered as specifically different from its rufous-tailed mate, and it is only lately that I have convinced myself that the two forms are nothing more than sexes of one and the same species. Such, however, is, I believe, without doubt, the case; and a short time since we had both cocks and hens of this species in the Society's Aviaries, and much hopes of inducing them to continue their race. These expectations have been frustrated through the unfortunate loss of the females, so that we must await the arrival of fresh birds from the East before we can expect to succeed in breeding this fine species in Europe.

The Rufous-tailed Pheasant is a native of Sumatra and the Malayan Peninsula, where it was first discovered and made known to science through the exertions of the late Sir Stamford Raffles. Skins of this bird are frequently to be met with in collections from Malacca, so that it would appear not to be an uncommon bird in the vicinity of that Settlement.

A nearly allied, but perhaps still finer species (*E. pyronotus*), is found in Borneo, distinguishable from the present bird by having the plumage below ornamented with white shaft-spots. The female of the Bornean bird is of a nearly uniform glossy black, like that of the present species.



THE RUFOUS-TAILED PHEASANT.

EUPLOCAMUS ERYTHROPHthalmus.

THE SIAMESE PHEASANT.

Euplocamus praelatus.

PLATE XXXV.

THE first specimens of the Siamese Pheasant transmitted to Europe were, I believe, those in the Museum at Leyden, to which M. Temminck attached the M.S. name *Gallus diardi*, but which Bonaparte afterwards preferred to introduce to science under the longer title of *Diardigallus praelatus*. To me, however, it appears that this bird is unquestionably a member of the *Euplocamus* group, which is intermediate between the true Pheasants (*Phasianus*) and the Jungle fowls (*Gallus*), and I have, therefore, great satisfaction in rejecting the hybrid generic appellation which Prince Bonaparte thought fit to impose upon it, in favor of a more simple name.

In his works on the birds of Asia, Mr. Gould has given an excellent representation of the male of this species from a stuffed specimen transmitted to him by the late Sir Robert Schomburgk, Her Majesty's Consul-General for Siam. Mr. Gould, however, acting upon information communicated to him by Mr. Blyth, has represented in his figure the outer tail-feathers turning out, like those of the Black-cock. On referring to the accompanying illustration, which has been prepared by Mr. Wolf from specimens of both sexes living in the Zoological Society's Gardens, it will be seen that this is erroneous, and that the natural posture of this bird is very much the same as that of the other members of the genus *Euplocamus*. It may also be noted that the figure given by Mr. Gould as that of the female of the Siamese Pheasant, taken from a drawing formerly in the possession of Mr. Crawford, is decidedly not applicable to the female of this species. It may, I think, possibly be referable to the female of the Lineated Pheasant, of which there is a larger and more strongly-marked race found in Siam.

Sir Robert Schomburgk informs us that this Pheasant is not found wild in the neighbourhood of Bangkok, but is a native of the states of *Lao* or *Shang* country, in the north-eastern part of Siam. Its native name is "*Kai-pha*." The species seems to adapt itself well to captivity, and having already bred in Europe is likely to become a most ornamental addition to our Pheasantries.



THE SIAMESE PHEASANT.

EUPLOCAMUS PRAELATUS.

VIEILLOT'S FIRE-BACKED PHEASANT.

Euplocamus vieilloti.

PLATE XXXVI.

THIS splendid Pheasant belongs to a small section of the same group of *Phasianidæ* as the two species last figured, and is intermediate in character between the true Pheasants and the Jungle-Fowls of the genus *Gallus*, whence our poultry are derived.

But few examples of the Fire-backed Pheasants, as this bird and some of its immediate allies are termed from the brilliant colouring of the lower part of the back, have been received alive in this country. Of the present species called Vieillot's Fireback, but one individual has ever been exhibited in the Society's Gardens, a male presented by Colonel Butterworth in June, 1851. Mr. Wolf's plate gives an accurate figure of this beautiful bird, which it is to be hoped may soon be reintroduced to grace our Aviaries.

The home of Vieillot's Fire-back is Tenasserim and other provinces of the Malayan peninsula, extending as far southwards as Malacca, and perhaps into Sumatra. In Borneo it is replaced by the Bornean Fire-back (*Euplocamus nobilis*), which has not yet been introduced alive into Europe.



VIEILLOT'S FIRE-BACKED PHEASANT.

EUPLOCAMUS VIEILLOTI.

SWINHOE'S PHEASANT.

Euplocamus swinhoii.

PLATE XXXVII.

SWINHOE'S Pheasant is the most recent addition to the splendid group to which it belongs, and has been most appropriately named after its energetic discoverer, who has toiled so successfully in investigating the natural products of the Island of Formosa.

Mr. Swinhoe tells us that this bird is found only in the interior mountains of Formosa. It is a true jungle-bird, frequenting the wild hill-ranges tenanted by the aboriginal savages, and rarely descending into the lower hills that border on the Chinese territory of that island.

Since his return to China, Mr. Swinhoe has made great exertions to supply the Aviaries of the Zoological Society with living examples of this fine species. The first cock bird was received in June, 1865, and others of the same sex followed, but great difficulties were experienced in introducing the hens of this species, and it was not until the autumn of 1866 that the two sexes were arranged together in the Society's Gardens. During the present breeding-season every effort has been made to induce this fine bird to reproduce itself in captivity, in which there seem to be fair prospects of success.



SWINHOE'S PHEASANT.

Euplocamus swinhoii

THE LINEATED PHEASANT.

Euplocamus lineatus.

PLATE XXXVIII.

THE Lineated Pheasant is closely allied to the three species of the same genus commonly called "Kaleeges," now well known in Europe, since their introduction through the agency of the Zoological Society in 1857.* Its nearest ally is Horsfield's Kaleege, of which a figure has already been given in these Sketches, and a series of intermediate varieties are said to occur in a wild state which connect that bird with the present species, although the two extreme forms, when compared together, present very marked distinctions in plumage.

The Lineated Pheasant is a native of the Forests of Tenasserim and Pegu, extending southwards into Siam. From the latter country specimens have been obtained for the Paris Museum, which differ from the northern bird only in their more robust form and rather stronger markings.

This species was first introduced alive into England in 1864, examples of both sexes having reached the Regent's Park Gardens in the month of June of that year. It was not, however, until the summer of 1866 that its reproduction was first effected. The bird again bred during the present season, and there are consequently great hopes that its name may shortly be added to the list of acclimatizable *Phasianidae*.

* See Zoological Sketches, ser. 1, pl. xxxix.



THE LINEATED PHEASANT.

EUPLOCAMUS LINEATUS

THE HORNED TRAGOPAN.

Cerionis satyra.

PLATE XXXIX.

THE Tragopans certainly stand pre-eminent amongst the magnificent Game-birds of the Himalayas, and no species amongst them would be more worthy of the assiduous care and attention which the introduction of a new bird to our English preserves would require. That it would be possible to effect this we see no reason to disbelieve, although it would, no doubt, necessitate many years of careful breeding and successive supplies of fresh blood before perfect success could be expected. But the object would surely be well worthy of the cost and trouble it would occasion, especially when we consider the sums lavished by English preservers of game upon the maintenance of their stocks of the Common Pheasant, and the superiority of the present bird both in size and beauty, when compared with our well-known species.

The Horned Tragopan is an inhabitant of the eastern portion of the great Himalayan chain, being replaced in the western Himalayas by an allied species—the Black-headed Tragopan (*Cerionis melanocephala*). The present bird is found in Nepal and Sikim, inhabiting the dense woods and jungles of the higher and middle ranges. It is usually met with in small companies, which on being approached run with great rapidity, and attempt to escape the sportsman rather in this manner than by flight.

In his recently-published work on the Birds of India, Dr. Jerdon gives us the following particulars of the habits of this species:—"It appears to be very abundant in Nepal, and is not rare at Sikim at considerable elevations. I have seen it at an altitude of about 9000 feet in spring. In winter it descends to between 7000 and 8000 feet in the vicinity of Darjeeling, and perhaps lower in the interior. It is frequently snared by the Bhotecas and other Hill-men, and brought alive for sale to Darjeeling. Its call, which I have heard in spring, is a low, deep, bellowing cry, sounding like *wa-a-ung-wa-a-ung*."

Although single examples of two other species of this genus had been at different times in the Society's Aviaries, the first instance of the successful importation of pairs of this magnificent group of birds occurred in March, 1863. On the last day of that month a fine collection of Indian Game-birds—partly presented to the Society by the Babu Rajendra Mullick, of Calcutta, and partly belonging to Mr. John J. Stone, F.Z.S., and the Rev. W. Smythe—arrived in the Gardens by the overland Mail from India. Among them were six males and three females of the present species of Tragopan. This bird, contrary to our expectations, seemed to adapt itself very readily to the somewhat different state of circumstances under which it was situated in the Society's Gardens, as contrasted with its native hills. When placed in a compartment of an Aviary recently constructed for the reception of the hardier kinds of Gallinaeae, the sexes paired at once, and commenced breeding shortly after their importation. Thirteen young birds were hatched in June and July, 1863, and seven of these were successfully reared. In the following year, likewise, six birds of these species were bred in the Gardens. So far, therefore, there seemed to be every prospect of the successful "acclimatization" of this new and brilliant addition to the Society's stock of Game-birds, though these expectations have been since unhappily frustrated by the recent death of nearly all the parent stock.



THE HORNED TRAGOPAN.

CERIORNIS SATYRA.

THE TALEGALLA.

Talegalla lathamii.

PLATE XL.

IN the whole economy of the class of birds, there is nothing more remarkable than the reproduction of the family of the Megapodes (*Megapodidae*), to which the Talegalla, or, as the Australian colonists call it, the Brush-Turkey belongs.

Instead of hatching their eggs by incubation in a nest, the whole of these birds, so far as their habits are yet known, construct a mound of earth, leaves, grass, sand, or other materials capable of generating and retaining heat, in which the eggs are buried by the female, and carefully watched by the male until matured. The young birds then issue forth stout, strong, and so fully feathered as to be capable of flight on the first or second day of their existence.

The male Talegalla, when the time of breeding is at hand, on being removed into an enclosure with an abundance of vegetable material within reach, begins to throw it up into a heap behind him, by a scratching kind of motion of his powerful feet, which projects each footful as he grasps it to a considerable distance in the rear. As he begins to work at the outer margin of the inclosure, the material is thrown inwards in concentric circles, until sufficiently near the spot selected for the mound to be jerked upon it. As soon as the mound is risen to the height of about four feet, both birds work in reducing it to an even surface, and then begin to excavate a depression in the centre. In this in due time, the eggs are deposited as they are laid, and arranged in a circle, about fifteen inches below the summit of the mound, at regular intervals, with the smaller end of the egg pointing downwards. The male bird watches the temperature of the mound very carefully. The eggs are generally covered, but a cylindrical opening is always maintained in the centre of the circle for the purpose of giving air to them, and probably to prevent the danger of a sudden increase of heat from the action of the sun or accelerated fermentation of the mound itself. In hot days the eggs are nearly uncovered two or three times between morning and evening.

On the young bird chipping out of the egg, it remains in the mound for at least twelve hours without making any effort to emerge from it, being at that time almost as deeply covered up as the rest of the eggs.

On the second day it comes out, with each of its wing feathers well developed in a sheath which soon bursts, but apparently without inclination to use them, its powerful feet giving it ample means of locomotion at once. Early in the afternoon, the young bird retires to the mound again, and is partially covered up for the night by the assiduous father, but at a diminished depth as compared with the circle of eggs from which it emerged in the morning. On the third day, the nestling is capable of strong flight, and on one occasion one of the young birds in the Society's Gardens, being accidentally alarmed, actually forced itself, while on the wing, through the meshes of the strong netting which covered the inclosure.

Besides the Talegalla two other members of the same group of birds are found in Australia—namely, the Ocellated Leipoa in Western and Southern Australia, and a species of Megapode (*Megapodius tumulus*, Gould), in Northern Australia. The remaining species of the family are mostly scattered over the great Papuan and Indian Islands, reaching on one side to the Nicobar Islands in the Gulf of Bengal, and on the other to the Philippines.



THE TALEGALLA.

TALEGALLA LATHAMI

THE OSTRICH.

Struthio camelus.

PLATE XLI.

Mr. WOLF's drawing, which represents the immature plumage of the Ostrich of Southern Africa, was taken from one of two individuals transmitted to the Society's Collection in 1859 by His Excellency Sir George Grey, F.Z.S., late Governor of the Cape Colony. Both these birds unfortunately died before reaching maturity, but were subsequently replaced by a fine adult pair from the same locality, presented to the Menagerie by the same liberal benefactor.

It may be remarked that, in the case of the Ostrich as likewise of all the other birds of the Struthious group with which we are acquainted, the male performs all the duties of incubation, and takes charge of the young ones when hatched. This has been proved to be the fact with the Ostrich in the course of recent experiments on its reproduction made in Southern France. The Mooruk, Cassowary, Emen, and Rhea, have each of them deposited eggs in the Society's Gardens, and in every instance the male has incubated, while the female has shewn no inclination to do anything of the sort. It may, therefore, be presumed that this rule obtains all through the series of Struthious birds.



THE OSTRICH

STRUTHIO CAMELUS.

THE WEKA RAIL.

Ocydromus australis.

PLATE XLII.

AMONGST all the birds met with in the province of Nelson, in New Zealand, none is so abundant, we are informed by Mr. J. Haast, who has written some interesting notes on the ornithology of that country, as the Weka Rail.

The Wood-hen, as it is called by the colonists, "is found everywhere on the grassy plains and in the forests, as well as near the summits of the mountains amongst the subalpine vegetation. It is omnivorous, and seems to be the true scavenger of the country. It despises nothing. Bread, flour, bacon, yellow soap, and even the remains of its own kindred, are greedily devoured. They quickly find out a camp, where their instinct leads them in search of food. The woods resound with their call, which consists of two notes in the octave, of which the lowest is the first given. We caught a great many, as a valuable addition to our stock of provisions. The capture is generally made by means of a flax snare at the end of a stick, keeping behind it a smaller bird, at which they run pugnaciously; and even when there is no time to take them in this way, no small bird being at hand, they come to the snare, attracted by a branch rattled on the ground behind it, accompanied by an imitation of the notes of one of the smaller birds. We have even caught them by the hand, by simply exhibiting a dead robin.

"The Weka lays four to five eggs, yellowish white, with chocolate-coloured spots, of the size of a fowl's egg, in a nest prepared rudely with a few dead leaves and dried grass, in a flax bush. It breeds in the months of November and December, like all the other birds of New Zealand with the exception of the Kaka (*Nestor meridionalis*), which breeds only at the end of summer—say at the end of February and beginning of March. The Weka has great affection for its young ones, and it was often with the aid of one of them, which were easily caught, that we secured the parents. A note of distress from the young bird invariably brings the old ones to its assistance, when they are easily caught in the snare held in readiness."

The Weka Rail is not unfrequently brought to England alive. Eggs of this bird have been more than on one occasion deposited in the Society's Gardens, but we have not yet succeeded in inducing the reproduction of the species in this country.

Some specimens of the Weka Rail are wholly of a much lighter, almost chestnut hue, varied with dark markings, like that figured on the right-hand side of Mr. Wolf's plate. These birds have been regarded, perhaps correctly, as belonging to a distinct species, which Mr. G. R. Gray has proposed to call *Ocydromus earli*, after Mr. Percy Earl, to whom the British Museum is indebted for a specimen belonging to this form.



THE WEKA RAIL.

OCYDROMUS AUSTRALIS.

THE SADDLE-BILLED STORK.

Ciconia senegalensis.

PLATE XLIII.

THE cranes and storks are alike showy and attractive birds, and ever since the Zoological Society's Gardens were first formed, have been much sought for as most desirable acquisitions for our living collection. At one time or another nearly the whole of the known species have been acquired, and the series of these two families exhibited rarely consists of less than from twenty-five to thirty individuals. During the summer these are arranged in pairs in a series of enclosures opposite the New Monkey House, though in the winter it becomes necessary to move some of them into a more sheltered situation.

The Saddle-billed Stork is one of the largest and most strongly marked of the whole family, its red-banded bill and parti-colored legs rendering it very noticeable. It is an inhabitant of the marshes and rivers of central Africa, extending on one side to the White Nile and Abyssinia, and on the other side to the Gambia. Mr. Petherick met with this bird on the Bahr el Ghazal in 1859, where he obtained living specimens of the *Baleniceps*, but did not succeed in bringing it alive to England. The pair from which Mr. Wolf's figures are taken were purchased from a dealer in Liverpool in April, 1861, having been received from some port of Western Africa. They were quite young on their arrival, but have now acquired their adult dress.



THE SADDLE-BILLED STORK.

MYCTERIA SENEGALENSIS.

THE SHOE-BILL.

Balaniceps rex.

PLATE XLIV.

THIS extraordinary bird which inhabits the morasses traversed by the upper branches of the White Nile in the interior of Africa is one of the most remarkable objects that have ever been received alive in the Society's Gardens. It is of greater interest as having escaped the notice of Naturalists until the year 1849, when two preserved specimens of it were first brought to Europe by Mansfield Parkyns, Esq., the well-known Abyssinian Traveller. These birds were shortly afterwards (January 14th, 1850) brought under the notice of the Zoological Society at one of their scientific meetings by Mr. Gould, who proposed for the species the scientific name *Balaniceps rex*.

In the summer of 1860 Mr. John Petherick, H. B. M., Consul for the Sudan, brought to England a living pair of these birds. They were purchased by the Society, and one of them lived nearly a year in the Gardens. They were young birds, having been hatched and reared under hens of the domestic fowl in a village situated on the Upper White Nile, and were the sole survivors of six individuals of the same species shipped for England by Mr. Petherick, from Khartoum.

The *Balaniceps*, as Mr. Petherick informs us, although only found in or near water, is but rarely seen on the banks of the Nile itself, and then only when the interior is dried up, during the short hot season of the summer. The locality where these birds are most abundant is the vicinity of Gaba Sehambyl, a hunting station, about a hundred miles to the west of the main stream, where a large morass with occasionally dry spots, which is more or less supplied with water all the year round, abounds in reeds and thick bushes, and offers them a favourite retreat.

"These birds," says Mr. Petherick, "are here seen in clusters of from a pair to perhaps one hundred together, mostly in the water, and when disturbed will fly low over its surface and settle at no great distance, but if frightened and fired at, they rise in flocks high in the air, and, after hovering and wheeling around, will settle on the highest trees, and as long as their disturbers are near will not return to the water. Their roosting place at night is, to the best of my belief, on the ground. Their food is, principally, fishes and water-snakes, which they have been seen by my men to catch and devour. They will also feed on the intestines of dead animals, the carcases of which they easily rip open with the strong hook of the upper bill. The breeding time of the *Balaniceps* is in the rainy season, during the months of July and August, and the situation chosen is in the reeds or high grass immediately on the water's edge, or some small elevated dry spot entirely surrounded by water. The birds, before laying, scrape a hole in the earth, in which, without any lining of grass or feathers the female deposits her eggs."

Mr. Gould, the well-known ornithologist, who first described this bird, was of opinion that it was more nearly allied to the Pelicans than to any other known form. But few who have seen it alive and studied its actions and general appearance will doubt that it must be arranged near the Storks (*Ciconia*), and in particular near the Tufted Umbrella (*Scopus umbretta*)—an aberrant member of the same family. An elaborate article on the osteology of the *Balaniceps*, founded on an examination of the skeletons of the birds that died in the Society's Gardens, has been prepared by Mr. W. K. Parker, F.R.S., and is published in the Society's "Transactions."



THE SHOE BILL.

BALORNICEPS REX.

THE KAGU.

Rhinochetus jubatus.

PLATE XLV.

THE Kagu is an inhabitant of the little-known island of New Caledonia, recently taken possession of by the French, and was first described by some French Naturalists in a memoir devoted to the Ornithology of the new French Colony. In December, 1861, Dr. George Bennett, of Sydney, N.S.W., well-known for his many liberal donations to the Society's Menagerie, received a living example of the Kagu from his friend and correspondent, Mr. D. N. Joubert, of New Caledonia. Dr. Bennett lost no time in forwarding this bird as a present to the Society's Menagerie, where it arrived in excellent condition on the 22nd of April, 1862. In the following years other specimens of this curious bird were received from the same liberal benefactor; so that the Society have now several examples of this very interesting and, until recently, unknown form in their Aviaries. Mr. Bartlett, the Superintendent of the Society's Gardens, gives the following account of the habits of this bird, as observed in a state of captivity—

"With its crest erect and wings spread out, the Kagu runs or skips about, sometimes pursuing and driving before him all the birds that are confined with him in the same aviary (amongst which are several Blue Water-hens), and evidently enjoying the fun of seeing them frightened. At other times he will seize the end of his wing or tail, and run round holding it in his bill. From a piece of paper or dry leaf he derives much amusement, by tossing it about and running after it. During his frolic he will thrust his bill into the ground and spread out his wings, kick his legs into the air, and then tumble about as if in a fit. At other times he appears intent upon catching worms; he steps slowly, his neck close to his body, his crest flat on his back, all his feathers smooth and close, he raises one foot, and, with two or three gentle strokes, he paws the ground; swiftly he darts his bill into the earth, and draws forth a worm; a sudden shake, and it is swallowed; again he runs; stopping suddenly, he makes another dart, and thus continues to capture this kind of food. With respect to feeding, this bird differs much from the Heron-family, seeking out in every hole and corner worms, snails, and other living things, whenever they are not in motion. As soon as a snail is found, he breaks its shell by repeated knocks upon the ground, and after shaking the fragments of the broken shell off, swallows the animal. In no instance, however, that I have observed, does this bird eat bread, seed, or any kind of vegetable. But he strictly confines himself to insects, and other animal substances."

In its native wilds in New Caledonia, the Kagu, as Dr. Bennett tells us, is usually seen about the sea coast, and by the sides of the rivers. In some parts of the island they were formerly very numerous, but are now becoming scarce, being much valued for food both by the natives and the French settlers, and numbers of them being shot and snared for the table. The nest and eggs have not been discovered, although Dr. Bennett's correspondents in New Caledonia are making great exertions for this purpose.

The alliances of the Kagu in the natural system are certainly with the Cranes (*Gruidæ*), and Rails (*Rallidæ*), though it diverges from the ordinary members of those families in several important particulars.



THE KAGU.

RHINOCHETUS JUBATUS

THE AFRICAN WOOD-IBIS.

Tantalus ibis.

PLATE XLVI.

THE small group of wading birds to which Linnaeus gave the name of *Tantalus* is closely allied to the Storks, although most writers on Natural History have hitherto associated them with the Ibises. But while many species of the latter group are very commonly met with in the Zoological Gardens of Europe, the Wood-Ibises (as the *Tantali* are usually called) are birds of greater rarity, and are seldom seen in a living state in our Aviaries.

In the summer of 1865, however, the Zoological Society were fortunate enough to possess living pairs of two species of this scarce form, which from their quaint outlines and beautiful plumage, attracted much attention. Mr. Wolf has illustrated the various attitudes they assume in this and the next succeeding plate.

The present species of Wood-Ibis is a native of western tropical Africa. Although many specimens of it have reached Europe from the various explorers who have penetrated into different parts of these regions, nothing, as far as I am aware, has been recorded concerning its habits. But, we may well presume that they do not materially differ from those of its Indian ally, of which we have trustworthy accounts.

v



THE AFRICAN WOOD IBIS.

TANTALUS IBIS.

THE INDIAN WOOD-IBIS.

Tantalus leucocephalus.

PLATE XLVII.

THE Indian Wood-Ibis, we are informed by Dr. Jerdon, is extremely common throughout India and Ceylon, frequenting rivers, tanks, ponds, and marshes, generally in parties more or less numerous, although solitary individuals are sometimes met with. In these situations its food consists of fishes, frogs, and crabs, in quest of which it stalks about in the shallows with its bill in the water.

Captain Burgess, who has communicated to the "Proceedings" of the Zoological Society some interesting notes on the birds of India, met with a community of these birds in a village near the Godavery river, where there were great numbers of banyan trees, both outside and inside the walls. These trees contained some fifty nests, the owners of which did not seem the least disturbed by the people passing beneath them. The village people stated that the old birds went off to the river to fish every day at early dawn, returning about eight or nine o'clock, and that a second expedition was made during the afternoon. So large was the quantity of fish brought back on these occasions, that the villagers were in the habit of collecting what was dropped while the young were being fed for food for themselves.

Although so abundant in its native country, the Indian Wood-Ibis is seldom brought to Europe—indeed I am not aware of any other individuals having reached England alive, except the pair from which Mr. Wolf's sketch is taken. These were received by the Zoological Society in July, 1864, having been presented to the Menagerie by their Corresponding Members Mr. A. Grote and the Baboo Rajendra Mullick, of Calcutta.



THE INDIAN WOOD-IBIS.
TANTALUS LEUCOCEPHALUS.

THE UPLAND GOOSE.

Chloephaga magellanica.

PLATE XLVIII.

IN the first series of these Illustrations I have given a figure of the Ashy-headed Goose (*Chloephaga poliocephala*), with which the "Upland Goose" was formerly confounded. In 1847, the receipt of living specimens of the present bird enabled me to point out the very marked characters which separate the two species. In the "Upland Goose," as will be seen by reference to Mr. Wolf's figures, the male has the fore part of the body of a clear white, and the female is brown, barred with black; while in the Ashy-headed Goose the sexes are so nearly alike, that it is almost impossible to distinguish them. These two species, as well as a third of the same group—the Ruddy-headed Goose (*C. rubidiceps*)—the sexes of which are alike, as in the Ashy-headed—all breed in the Society's Gardens every year; so that the various phases of their respective plumages are now well known to us.

In a state of nature the Upland Goose inhabits the Falkland Islands, and the adjacent southern portions of the South American continent. Mr. Darwin in the "Voyage of the *Beagle*," tells us that this species is common in the former locality, but keeps to the interior of the Islands, whence it has received its name of the "Upland" Goose, being seldom or never found near the coasts. In some interesting notes on the birds of the Falkland Isles, published in "The Ibis" for 1861, Captain C. C. Abbott supplies us with the following particulars concerning the habits of this bird in a state of nature:—

* "This Goose is found abundantly everywhere in East Falkland. At Cow Bay, where the grass is short and sweet, Rabbits, Upland Geese, and Jackass Penguins, are so plentiful, that the place is called 'The Farmyard.' The Upland Goose is easily domesticated, and very readily takes to eating corn. It breeds all over the country, as well as on the adjoining islets; and on this point Mr. Darwin seems to have made a mistake, unless the disappearance of the Fox from East Falkland has caused a change in its habits in this respect.

"These Geese sometimes lay in the long grass, and at other times in the bushes on the banks of streams. The nest is rudely formed of grass till the laying is completed, when the bottom is lined with down. This is one way of telling whether the eggs are sat upon or not. Owing to the Gander generally stationing himself about one hundred yards from where the female is sitting, I used to think it was easy to find the nest; but I have sometimes walked about for nearly an hour before I could come upon the female, as she never moves until almost trodden upon. A curious peculiarity of this bird is that, when they leave their nest, after laying, they cover it up with straw, and when they leave it after the eggs are set upon, they cover it up with down. No doubt, in the latter case, this is done to keep the warmth in the eggs, and in the former to prevent their destruction by birds of prey. This peculiarity of covering up the eggs seems to be common to all the geese and ducks of the Falkland Islands.

"The Upland Goose lays generally in the first week in October. Sometimes I have found seven, sometimes eight eggs in a nest, the latter number being, I think, the maximum. The young birds nearly acquire their plumage in the first year, and are only distinguishable by the mottled colour of their feet, and their plumage being less bright. In the second year the young birds moult their wing feathers, and are then found together in large flocks near the sea coast, where on being disturbed they immediately run down to the salt water, being unable to fly in this condition."



THE UPLAND GOOSE.

CHLOEPHAGA MAGELLANICA.

THE SHIELDED DUCK.

Anas scutulata.

PLATE XLIX.

THIS is a scarce Indian species of Duck, of which little is known. It appears to have been first discovered in Java, by the Dutch Naturalist, Solomon Müller, by whom it was described in the notes to the ethnographical volume of the great Dutch work on the Natural History of the foreign dependencies of the Netherlands under the name *Anas scutulata*. Shortly afterwards examples were brought from the Tenasserim provinces to the Museum of the Asiatic Society at Calcutta, and attracted the notice of its ever-watchful Curator Mr. Edward Blyth. Mr. Blyth described the bird in the Journal of the Society under the name *Casarca leucoptera*, and also transmitted drawings of it to the late well-known Ornithologist, Mr. H. E. Strickland, who gave a figure and short description of the species in the "Contributions to Ornithology" for 1850.

In 1851 two living examples of this Duck were transmitted to England by Mr. Blyth. One of them reached this country alive, and passed into the Society's possession. Mr. Wolf's drawing was taken from this bird in the following year, shortly after which the bird died, and was deposited in the British Museum.



THE SHIELDED DUCK.

ANAS SCUTULATA.

THE CLOTHO.

Clotho nasicornis.

PLATE L.

THE genus *Clotho* embraces several large species of venomous serpents, all of which inhabit the tropical coasts of Western Africa. Like other vipers they are slow and stolid in demeanour, and never make an attack unless irritated, reserving their supply of venom for the purpose of procuring subsistence for themselves. Their food is believed to consist exclusively of small mammals, which they are said to procure by lying in wait for them during the day time, leaving, however, their prey dead beside them till nightfall before it is devoured.

The *Clotho nasicornis* inhabits the African coast from Sierra Leone to Fernando Po. Further south it is replaced by an allied species, the *Clotho rhinoceros*.

The present drawing represents the first specimen of this deadly species which was brought alive to Europe. It was procured in 1856, but did not live long in the Society's collection. Since then, in January, 1862, another example has been received, but this one also lived but a short time in captivity.

The Clothos are amongst the most deadly of the known venomous serpents, but their sluggish habits render them less dangerous than the Cobras (*Naia*) and others of more lively and active habits.



THE CLOTHO.

CLOTHO NASICORNIS.

